SHARP SERVICE MANUAL

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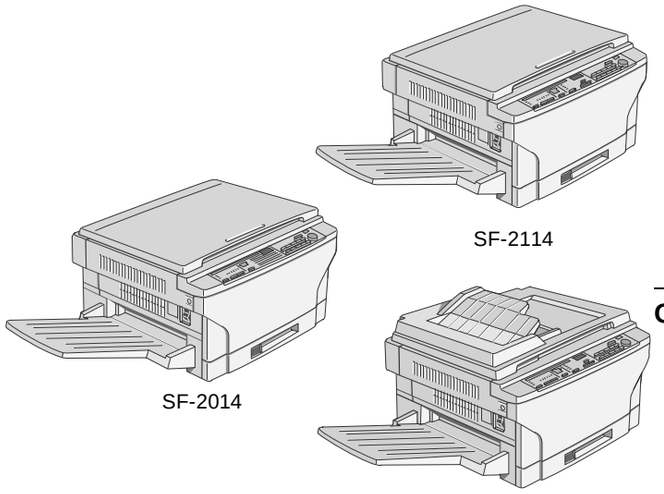

SF-2014
SF-2114
MODEL SF-2214

Options

- **Paper tray (SF-UB14)**
- **Multi paper feed unit (SF-MF14)**
- **Paper feed unit (SF-CM14)**
- **Copier table (SF-720D2)**
- **Personal counter (SF-71A/71B)**

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Parts marked with "! " is important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

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[1] GENERAL DESCRIPTION

1. Features

[Small]

- Compact design
- Small area for operation

[Speedy]

- Warm-up time 30 sec or less, the first copy 5.9 sec ~ the fastest in the class.
- The automatic document feeder (standard provision in the SF-2214 only) increases copy productivity.
- The photoconductor and the peripheral parts are integrated into units. The novel two-component development system eliminates the need for developer replacement. Parts replacement procedures in the fuser section and the paper feed section are simplified to remarkably reduce maintenance time.

[Soft]

- The energy save mode reduces the total power consumption.
- The noise limiting design results in the quietest machine in the industry (46 dB).
- Ozone generation is limited.
- Use of materials which can be recycled.

User simulation

The user can select the desired operating conditions easily. Auto clear time, power save mode time, power save mode warm up time can be set by the user simulation.

2. Target users

Average copy volume of 2,000 ~ 3,000 sheets/month (max. 10,000 sheets/month)

3. Novel technology

Novel two-component development system

During copy process, developer is substituted little by little to prevent image deterioration. Replacement of developer is not needed. A developer/toner recycling method is used.

SPF (Single Pass Feeder)

When documents are placed in the feed port and the PRINT key is pressed, the SPF will feed the documents automatiaclly. The SPF enables one set of copies for one set of documents.

4. Novel functions

Power save function
After a set time, has passed since a copy run has finished, the pwer save function operates to save energy. There are two kinds of power save function as shown below. The preferred power save mode can be selected by the key operator.

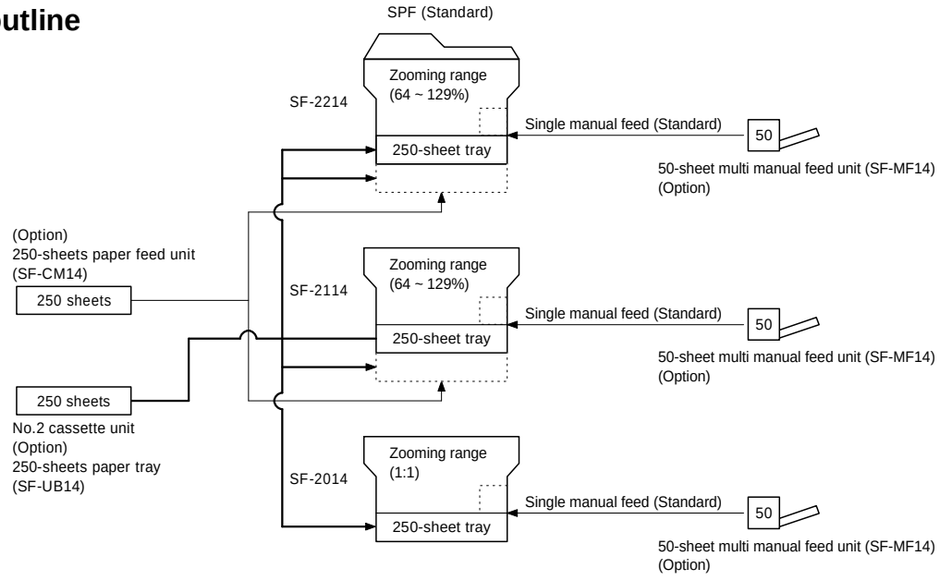
1) Pre-heat

- The temperature in the fuser section is lower than that in the ready state.
- Within 10 sec after completion of pre-heating, the machine returns to the ready state.

2) Auto power shut off

- Power supply to the fuser section is shut off.
- The time required to return to the ready state and turn on the ready lamp after completion of auto power shut off is the same as warm-up time after turning on the power.

5. System outline



SYSTEM TABLE

* As the other options for all the modeks, the desk (SF-720D2) and the personal counter (SF-71A/71B) are available.

MODEL	FUNCTIONS/OPTIONS					
	ZOOM	2ND PAPER FEED UNIT (OPTION)	2ND PAPER FEED UNIT (OPTION)	MULT PAPER FEED UNIT (OPTION)	SINGLE PAPER FEED UNIT	PAPER FEED TRAY (OPTION)
SF-2014	NON	STANDARD (SF-M14)	NON	AVAILABLE (OPTION) (SF-MF14)	STANDARD	OPTION (SF-UB14)
SF-2114	STANDARD	STANDARD (SF-M14)	AVAILABLE (OPTION) (SF-CM14)	AVAILABLE (OPTION) (SF-MF14)	STANDARD	OPTION (SF-UB14)
SF-2214	STANDARD	STANDARD (SF-M14)	AVAILABLE (OPTION) (SF-CM14)	AVAILABLE (OPTION) (SF-MF14)	STANDARD	OPTION (SF-UB14)

[2] PRODUCT SPECIFICATIONS

1. Basic specifications

(1) Type: Table top

(2) Copy speed

- SF-2014

Paper size	Normal	Enlargement	Reduction
B4	11 sheets/min	—	—
A4 (Landscape)	14 sheets/min	—	—
B5 (Landscape)	14 sheets/min	—	—
10″ × 14″	11 sheets/min	—	—
Legal	11 sheets/min	—	—
Letter (Landscape)	14 sheets/min	—	—

- SF-2114/2214

Paper size	Normal	Enlargement	Reduction
B4	11 sheets/min	10 sheets/min	12 sheets/min
A4 (Landscape)	14 sheets/min	10 sheets/min	12 sheets/min
B5 (Landscape)	14 sheets/min	10 sheets/min	12 sheets/min
10″ × 14″	11 sheets/min	10 sheets/min	12 sheets/min
Legal	11 sheets/min	10 sheets/min	12 sheets/min
Letter (Landscape)	14 sheets/min	10 sheets/min	12 sheets/min

Note: Copy speeds in the enlargement/reduction copy are the same in all the rates.

(3) Warm-up time

Normal	Max. 30 sec
Pre-heat	Max. 10 sec
Auto power shut off	Max. 30 sec

(4) First copy time: 5.9 sec (Fed from No. 1 cassette)

(5) Jam recovery time: 5 sec (Condition: Jam in a section except for the fuser section, within 6.0 sec from door open, standard condition.)

(6) Multi copy

Max. quantity of multi copy	99 sheets

(7) Document

Max. document size	B4/10″/14″
Document reference position	Left side
Detection	No

(8) Copy magnification ratio (model SF-2114/2214 only)

Fixed magnification ratio	AB series	122, 115, 81, 70%
	Inch series	129, 117, 78, 64%
Zoom range		64 ~ 129% in 66 steps of 1% increment

(9) Exposure

Exposure mode	Auto/Manual/Photo
Manual steps	9 steps

(10) Void width

	Normal	Enlargement	Reduction
Void area	Lead edge 3.0mm or less	Lead edge 3.0mm or less	Lead edge 3.0mm or less
Image loss	Lead edge 3.0mm or less	Lead edge 2.5mm or less	Lead edge 5.0mm or less

(11) Paper exit

Paper exit tray capacity	100 sheets

(12) External demensions

	SF-2014	SF-2114	SF-2214
W × D × H (mm)	500 × 480 × 295		500 × 480 × 364
Occupying width (mm)	500 + 261 (Paper exit tray) + 205 (Option MB)		
Weight	26.2 Kg	26.7 Kg	29.5 Kg

(13) Power source

Power source	100V, 110V, 120V, 127V, 220 ~ 240V, 220V, 240V
Frequency	50/60Hz

(14) Power consumption

Max. power consumption	1.4 kW
Average power consumption when operating	0.48 kW
Power consumption in standby	0.095 kW
Power consumption in pre-heating	0.056 kW
Power consumption in auto power shut off	0.026 kW

Note: Max. value when an option is installed.

2. Details of each section

(1) Paper feed section

Copy size	AB series	B4 ~ A6
	Inch series	10″ × 14″ ~ 4″ × 6″
Paper feed system		1 cassette + manual paper feed
Paper feed capacity		250 × 1 + 1 or 50

- AB series

Paper feed port	Paper feed size	Paper weight	Special paper
Tray	B4 ~ A5 (Landscape)	56 ~ 80g/m^2	Recycled paper
Paper feed unit (OP)	B4 ~ A5 (Landscape)	56 ~ 80g/m^2	Recycled paper
Single manual feed	B4 ~ A6 (Portrait)	52 ~ 130g/m^2	Second original, OHP, label
	A4 ~ A5 (Portrait)	104 ~ 130g/m^2	Postcard, recycled paper
Multi manual feed • Multi paper feed	B4 ~ A5 (Portrait)	52 ~ 130g/m^2	Postcard, recycled paper
• Single paper feed	B4 ~ A6 (Portrait) A4 ~ A5 (Portrait)	52 ~ 130g/m^2 104 ~|130g/m^2	Second original, OHP, label, postcard, recycled paper

- Inch series

Paper feed port	Paper feed size	Paper weight	Special paper
Tray	10″ × 14″ ~ invoice	15 ~ 21 lbs	Recycled paper
Paper feed unit (OP)	10″ × 14″ ~ invoice	15 ~ 21 lbs	Recycled paper
Single manual feed	10″ × 24″ ~ 4″ × 5″	14 ~ 34.5 lbs	Second original, OHP, label
	Letter ~ 4″ × 6″	28 ~ 34.5 lbs	Postcard, recycled paper
Multi manual feed (OP) • Multi paper feed	10″ × 14″ ~ 4″ × 6″	15 ~ 21 lbs	Recycled paper
• Single paper feed	10″ × 14″ ~ 4″ × 6″ Letter ~ 4″ × 6″	14 ~ 34.5 lbs 28 ~ 34.5 lbs	Second original, OHP, label, postcard, recycled paper

(2) Optical section

Light source	Halogen lamp
Exposure system	Slit exposure by moving the light source
Magnification ratio changing system	By changing the lens position and scan speed.
Lens	Fixed focus lens

(3) Process section

Charging system	(–) DC scorotron system		
Transfer system	(–) DC scorotron system		
Separation system	Discharge plate/separation pawl		
Main charger grid voltage	Copy mode	Simulations No.	Grid voltage
	Standard	8-02	–780V±10V
	Photo	8-03	–480V±10V
	Toner save	8-04	–660V±10V
Charge/Transfer charger applied voltage	–50.0μA ± 4μA		

(4) Developer section

Developing system	Novel two-component developing system (Developer replacement not required)
Toner density detection system	Magnetic sensor system
Toner box capacity	Developer 48g, toner 180g
Developing bias	DC–200V±3V

- Developer

Material	Iron powder carrier
Charging system	Negatively charged by friction

- Toner

Charging system	Positively charged by friction

(5) Fuser section

Fusing system		Heat roller system
Upper heat roller surface temperature		180˚C
Heater lamp	100V	Halogen lamp 1000 W × 1 pc.
	110V	Halogen lamp 1000 W × 1 pc.
	120V	Halogen lamp 1000 W × 1 pc.
	127V	Halogen lamp 1000 W × 1 pc.
	220V	Halogen lamp 1000 W × 1 pc.
	230V	Halogen lamp 1000 W × 1 pc.
	240V	Halogen lamp 1000 W × 1 pc.

(6) Drive section

Main motor standard	3-phase full wave drive, DC brushless Rating: DC32V, max. 1.32A, 1500 rpm

(7) SPF

Standard/option	Standard only in the SF-2214
Document load capacity	About 20 sheets, max. thickness of 3.0 mm
Document size	A5 ~ B4, 5 1/2″ × 8 1/2″ ~ 10″ × 14″
Document replacement speed	14 sheets/min
Document weight	52 ~ 90 g/m^2
Random/mix paper feed	Not available

3. Supplies

USA, Canada

No.	Item	Contents	Life	Model name	Packing unit
1	OPC Drum Cartridge	• OPC Drum Cartridge x 1	40K	SF-214DR	10
2	OPC Drum Kit	• OPC Drum x 1 • Cleaner Blade x 1	40K	SF-214DK1	10
3	Black Toner	• Black Toner Cartridge x 1	4K	SF-214NT1	10
4	Black Developer	• Black Developer Cartridge x 10		SF-214MD1 (SF-214ND1 x 10)	1
5	Heat Roller Kit	• Upper Heat Roller x 1 • Upper Separation Pawl x 3 • Lower Heat Roller x 1 • Lower Separation Pawl x 3	80K	SF-214HR1	5

Europe/Australia/Newzealand/Middle Easte/Africa

No.	Item	Contents	Life	Model name	Packing unit
1	OPC Drum Cartridge	• OPC Drum Cartridge x 1	40K	SF-214DM	10
2	OPC Drum Kit	• OPC Drum x 1 • Cleaner Blade x 1	40K	SF-214DK2	10
3	Black Toner	• Black Toner Cartridge x 1	4K	SF-214T1	10
4	Black Developer	• Black Developer Cartridge x 10		SF-214LD1 (SF-214DV1 x 10)	1
5	Heat Roller Kit	• Upper Heat Roller x 1 • Upper Separation Pawl x 3 • Lower Heat Roller x 1 • Lower Separation Pawl x 3	80K	SF-214HR	5

* Except for Saudi Arabia

Asia/Central and South America

No.	Item	Contents	Life	Model name	Packing unit
1	OPC Drum Cartridge	• OPC Drum Cartridge x 1	40K	SF-214DR	10
2	OPC Drum Kit	• OPC Drum x 1 • Cleaner Blade x 1	40K	SF-214DK1	10
3	Black Toner	• Black Toner Cartridge x 1	4K	SF-214ST1	10
4	Black Developer	• Black Developer Cartridge x 10		SF-214CD1	1
5	Heat Roller Kit	• Upper Heat Roller x 1 • Upper Separation Pawl x 3 • Lower Heat Roller x 1 • Lower Separation Pawl x 3	80K	SF-214HR	5

Saudi Arabia

No.	Item	Contents	Life	Model name	Packing unit
1	OPC Drum Cartridge	• OPC Drum Cartridge x 1	40K	SF-214DH	10
2	OPC Drum Kit	• OPC Drum x 1 • Cleaner Blade x 1	40K	SF-214DK3	10
3	Black Toner	• Black Toner Cartridge x 10	4K x 10	SF-214HT1 (SF-214FT1 x 10)	10
4	Black Developer	• Black Developer Cartridge x 10		SF-214LD1 (SF-214DV1 x 10)	1
5	Heat Roller Kit	• Upper Heat Roller x 1 • Upper Separation Pawl x 3 • Lower Heat Roller x 1 • Lower Separation Pawl x 3	80K	SF-214HR1	5

COMPATIBILITY TABLE OF OPC DRUM UNIT

TYPE	COLOR OF DRUM FLANGE	MODEL NAME	LIFE	OPC DRUM	EEPROM	DESTINATION
CURA	BLACK	SF-DR14	40K	HANDRING BY SERVICEMAN	INSTALLED	JAPAN
CRUB	BLACK	SN-142DR	25K	HANDRING BY CUSTOMER	INSTALLED	North America (SN Series)
CRUC	BLACK	ZT-80DR	20K	HANDRING BY CUSTOMER	INSTALLED	North America (Z Series)
SRUA	SKIN COLOR	SF-214DR (SF-214DK1)	40K	HANDRING BY SERVICEMAN	NON	North America (SF Series)
						Latin America/Asia
SRUB	BLUE	SF-214DM (SF-214DK2)	40K	HANDRING BY SERVICEMAN	NON	Europe/Australia/Middl Eeste/Africa
		SF-214DH (SF-214DK3)	40K	HANDRING BY SERVICEMAN	NON	Saudi Arabia/Jordan

TYPE	MODEL NAME	DRUM SHAFT SIZE	SHAFT SIZE OF FRAME	FIXING METHOD	MATCHING MAIN CONTROL PWB (PART CODE)	CONTROL RESISTOR (R102)
CURA	SF-DR14	7mm	7mm	SCREW	*1 CPWBF1051FC51	82K
CRUB	SN-142DR	7mm	7mm	LOCK RIB	CPWBF1051FC52	36K
CRUC	ZT-80DR	7mm	7mm	LOCK RIB	CPWBF1051FC53	24K
SRUA	SF-214DR (SF-214DK1)	9mm	9mm	SCREW	*2 CPWBF1051FC51	82K
SRUB	SF-214DM (SF-214DK2)	8mm	8mm	SCREW	*2 CPWBF1051FC51	82K
	SF-214DH (SF-214DK3)					

*1/*2: Hardware Is common but setting condition is different of the T.C 26-6.

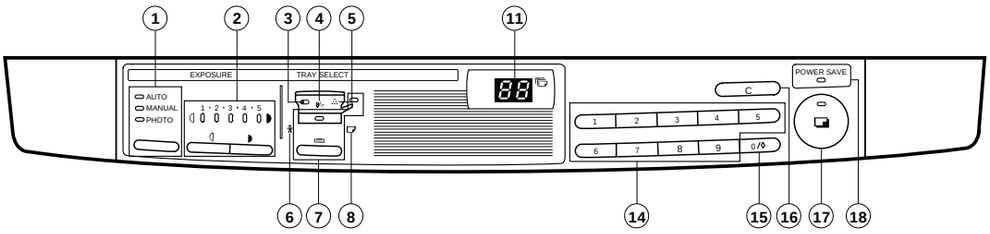
COMPATIBILITY TABLE OF TONER CARTRIDGE

TONER					UPPER FRAME F					
TYPE	MODEL NAME	LIFE	DESTINATION	SHAPE	TONER CARTRIDGE BLOCK					PARTS CODE
A	SF-214NT1 SF-214ST1	4K 4K	North America (SF Series) Latin America/Asia	A	F	D	F	F	F	LFRM-0800FCZZ
B	SF-ST14B	2.5K	Japan	B	F	F	D	F	F	
	SF-214HT1	4K	Saudi Arabia/Jordan							
	SF-214T1	4K	Europe/Australia/Middl Eeste/Africa							
C	SN-142NT1	4K	North America (SN Series)	C	F	F	F	D	F	
D	ZT-80TD1	4K	North America (Z Series)	D	F	F	F	F	D	

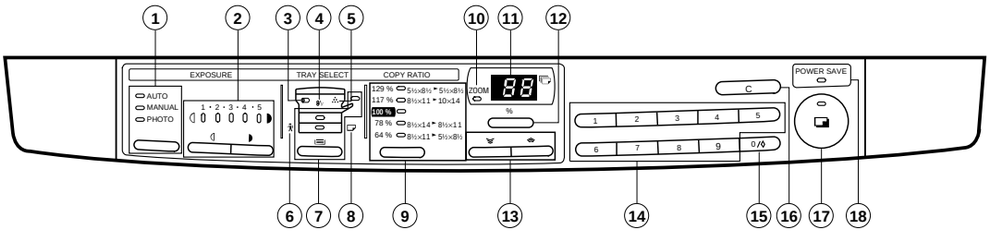
Developer and Heat roller kit are common use, model name is differrent but contents is same.

2. Operation panel

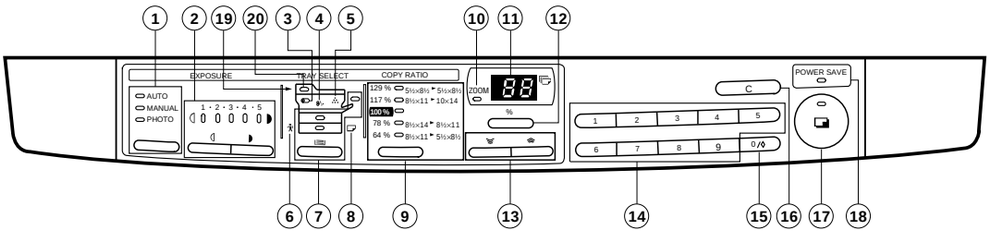
SF-2014



SF-2114

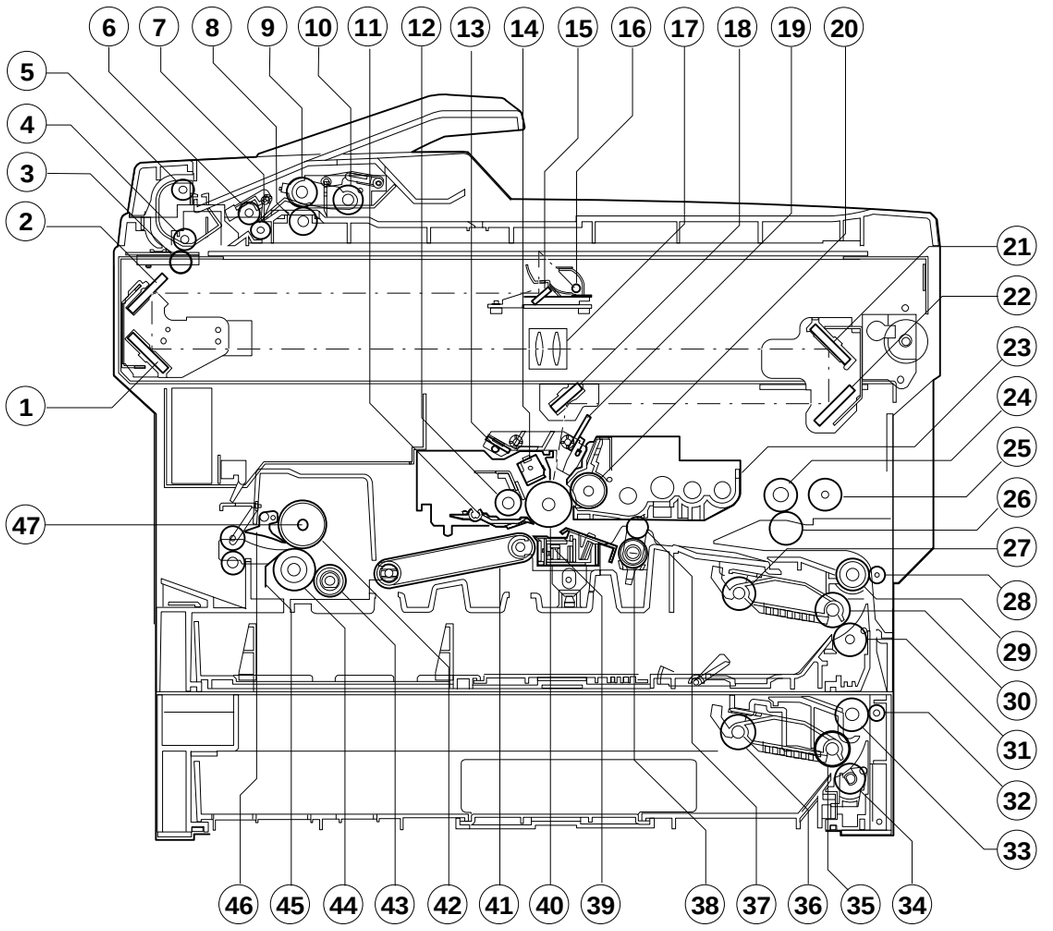


SF-2214



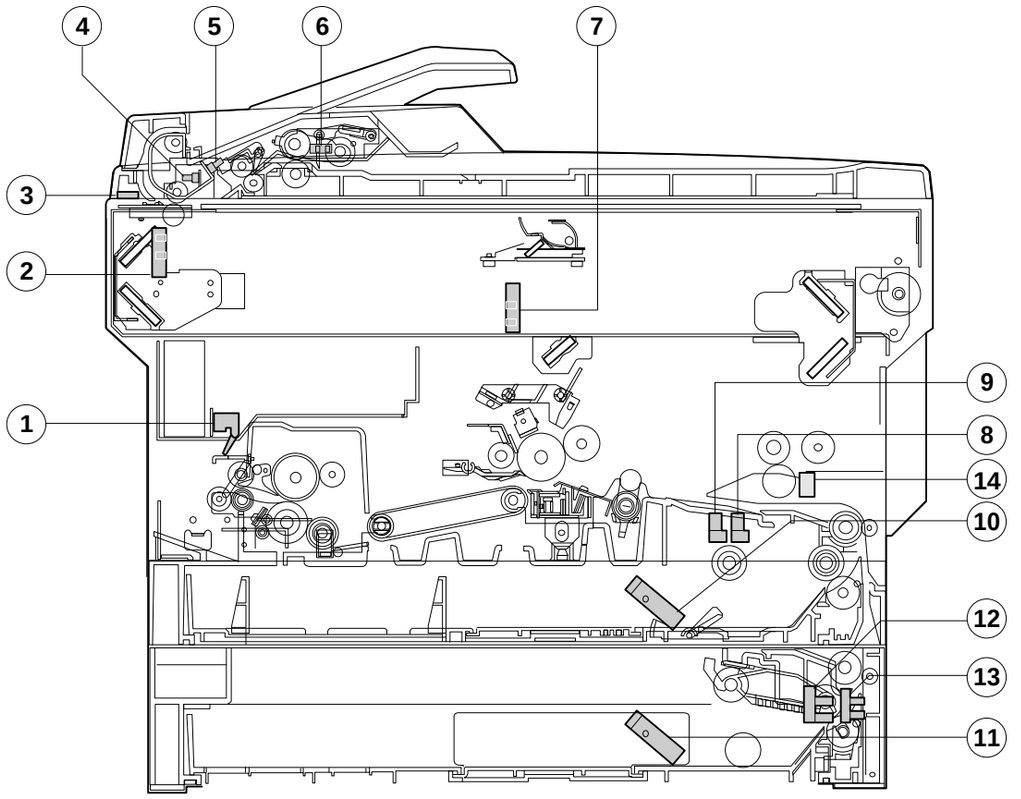
No.	Name	No.	Name	No	Name
1	Auto/manual/photo key and indicators	2	Light and dark keys and exposure indicators	3	Drum replacement required indicator
4	Misfeed indicator	5	Toner required indicator	6	Maintenance required indicator
7	Tray select key and indicators	8	Paper required indicator	9	Copy ratio selector key and indicators
F	Zoom indicator	G	Copy quantity display	H	Copy ratio display key
I	Zoom keys	J	10-key pad	K	Zero/read-out key
L	Clear key	M	Print button and ready indicator	N	Power save indicator
0	SPF misfeed indicator	P	SPF indicator		

3. Cross section (SF-2214 as the example model)



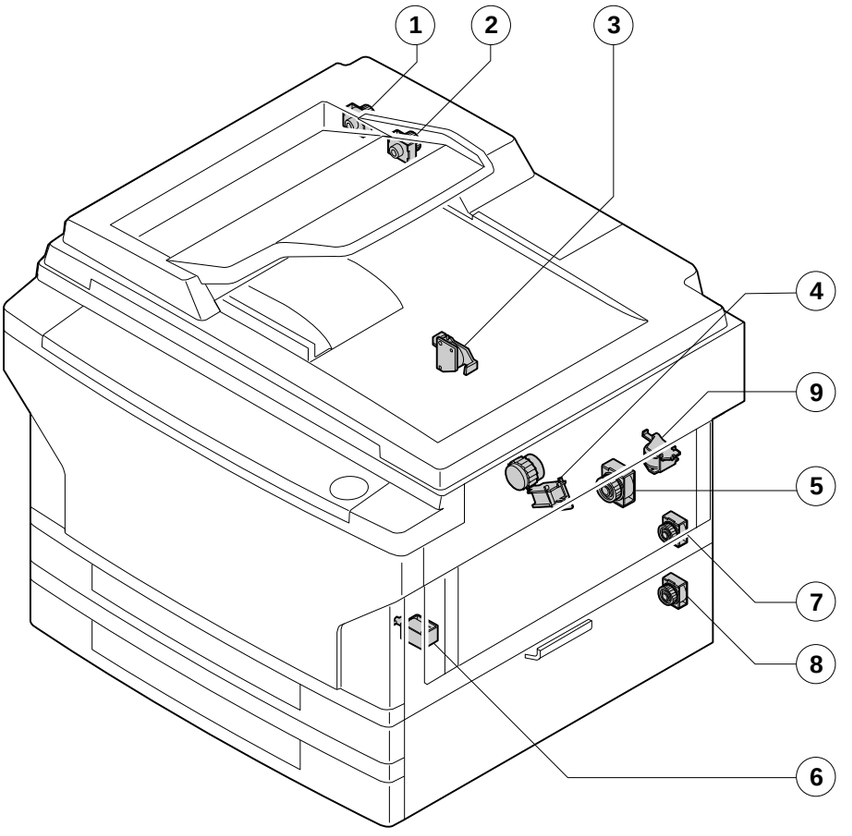
No.	Name	No.	Name	No	Name
1	No.3 mirror	2	No.2 mirror	3	SPF transport follower roller
4	SPF transport roller	5	SPF document exit roller	6	SPF PS roller upper
7	SPF PS roller lower	8	SPF document feed reverse roller	9	SPF document feed roller
F	SPF document takeup roller	G	Drum separation pawl	H	Cleaner unit
I	Discharge lamp	J	Main charger unit	K	No.1 mirror
L	Copy lamp	M	Lens unit	N	No.6 mirror
O	Blank lamp	P	Developer magnet roller	Q	No.4 mirror
R	No.5 mirror	S	Developer tank	T	Manual paper feed roller
U	Manual feed take-up roller	V	Manual paper feed follower roller	W	Tray paper feed takeup roller
X	Tray transport follower roller	Y	Transport roller (Upper)	Z	Tray paper feed roller
[	Tray paper feed reverse roller	\	Option tray transport follower roller	]	Option tray transport roller
^	Option tray paper feed reverse roller	_	Option tray paper feed roller	‘	Option tray paper feed takeup roller
a	Resist roller	b	Resist roller	c	Transfer charger
d	Photoconductor drum	e	Suction belt	f	Upper heat roller
g	Lower cleaning roller	h	Lower heat roller	i	Lower separation pawl
j	Upper separation pawl	k	Heater lamp		

4. Switches, sensors, detectors (The SF-2214 as the typical example)



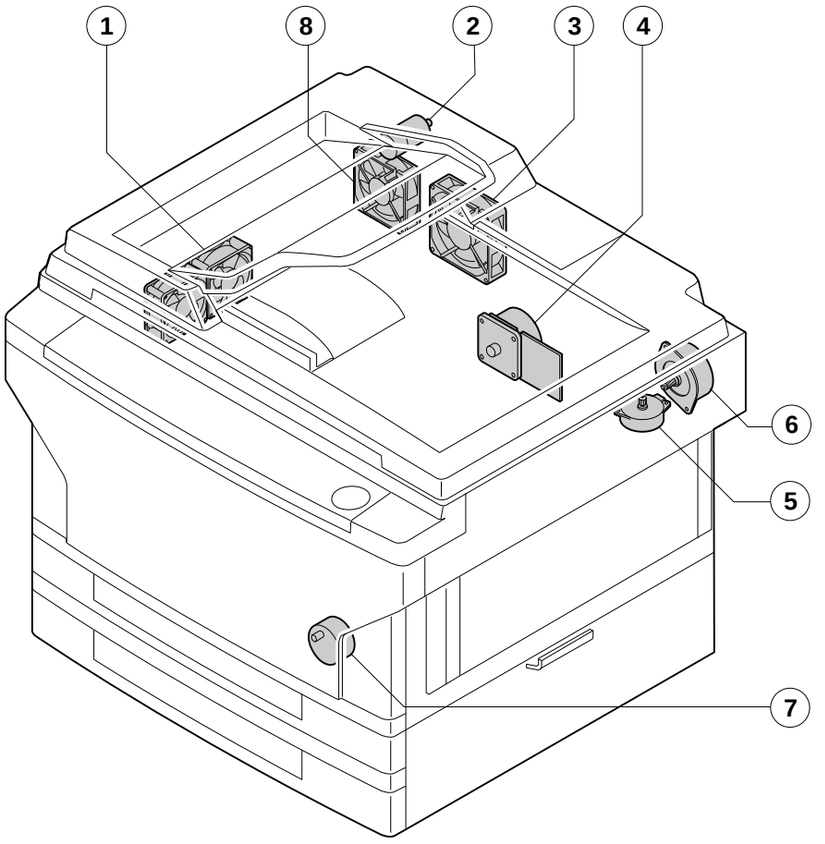
No.	Abbreviation	Function	Type	Operation
1	POD	Paper out sensor	Transmission photo sensor	H when paper is sensed.
2	MHPS	Mirror home position sensor	Transmission photo sensor	H at the home position.
3	SDSW	SPF cover open/close sensor	Lead switch	H when the cover is open.
4	SPOD	SPF document out sensor	Transmission photo sensor	L when paper is sensed.
5	SPPD	SPF document transport sensor	Transmission photo sensor	H when paper is sensed.
6	SPFD	SPF document set sensor	Transmission photo sensor	L when a document is set.
7	LHPD	Lens home position sensor	Transmission photo sensor	H at the home position.
8	PWD	Paper size (large/small) sensor	Transmission photo sensor	L with the large size.
9	PPD	Paper transport sensor	Transmission photo sensor	L when paper is sensed.
F	CPED1	Tray paper empty sensor	Transmission photo sensor	H when paper is present.
G	CPED2	Option tray paper empty sensor	Transmission photo sensor	H when paper is present.
H	CSPPD	Option tray paper path/empty sensor	Transmission photo sensor	H when paper is sensed.
I	CSDSW	Option tray paper feed cover open/close sensor	Transmission photo sensor	L when the cover is open.
J	PID (MFD1)	Paper sensor for Manual paper feed unit (only single Manual Paper feed unit)	Transmission photo sensor	L when the cover is open.

5. Clutches, solenoids (The SF-2214 as the typical example)



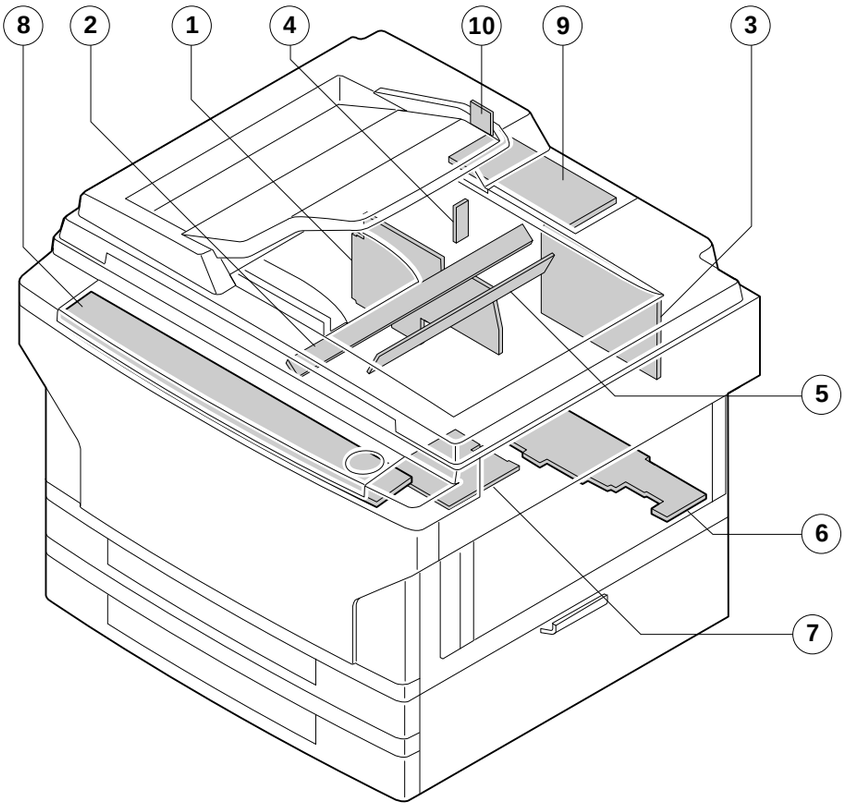
No.	Abbreviation	Name	Function and operation
1	SRRC	SPF resist roller clutch	For SPF resist roller rotation
2	SPM	SPF document transport clutch	For SPF transport roller rotation
3	PSPS	Paper separation solenoid	For paper separation solenoid drive
4	RRC	Resist roller clutch	For resist roller rotation
5	TRC	Transport roller clutch	For transport roller rotation
6	MPFS	Manual paper feed solenoid	For takeup roller pressing
7	CPFC1	Tray paper feed clutch	For paper feed roller rotation
8	CPFC2	Option tray paper feed clutch	For paper feed roller rotation
9	SPFM	Multi paper feed clutch	For multi paper feed roller rotation

6. Motors (The SF-2214 as the typical example)



No.	Abbreviation	Name	Function	Type
1	VFM	Paper exit fan motor	For ventilation of the fuser unit. For cooling the machine and removing ozone.	DC brushless
2	SPFM	SPF motor	For SPF drive	DC brushless
3	CFM	Cooling fan motor	For cooling the optical system	DC brushless
4	MM	Main motor	For the main body drive and the option drive	DC brushless
5	LM	Lens motor	For the optical lens drive	DC stepping
6	MRM	Mirror motor	For the optical mirror base drive	DC brushless
7	TM	Toner motor	For toner supply	DC synchronous
8	SPFFM	SPF cooling fan motor	For cooling the optical system in the SPF mode	DC brushless

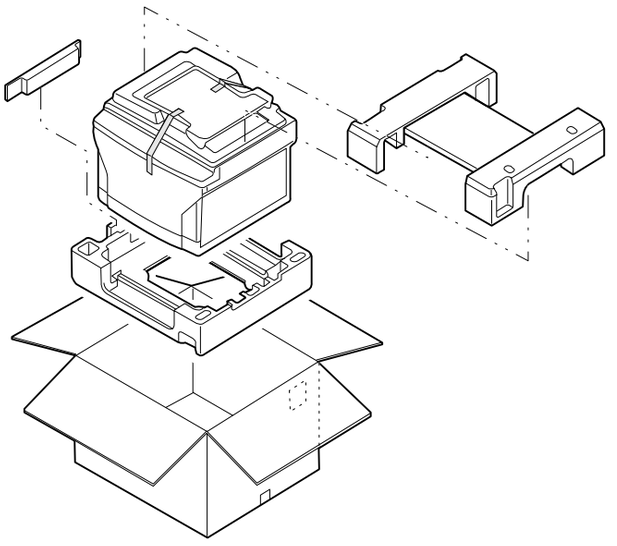
7. PWBs (The SF-2214 as the typical example)



No.	Name	Description
1	AC circuit PWB	AC power input
2	Discharge lamp PWB	Discharge lamp drive
3	Main PWB	Main body control
4	AE PWB	Document density auto exposure detection
5	Blank lamp PWB	Blank lamp control
6	Lower unit PWB	Lower unit parts control
7	High voltage PWB	Supply of the process high voltage and the developer bias voltage.
8	Operation PWB	Operation input, display control
9	SPF control PWB	SPF control
F	RE PWB	Speed detection for SPF motor

[4] UNPACKING AND INSTALLATION

1. Packing drawing



List of packing materials and accessories

	Name	Q'ty
1	Packing case	1
2	SPF tray	1
4	SPF cover protection material	3
5	Body	1
6	Polyethylene bag for paper exit tray	1
7	Vinyl sheet for body	1
8	Bottom case	1
9	Bottom case pad (L)	1
10	Bottom case pad (R)	1
11	AC cord sleeve	1
12	Paper exit tray	1
14	Instruction Manual unit	
	Instruction Manual	1
	Dust cover (For some agents)	1
	Warranty card (For Austraria)	1
	Warranty resistration (For U.K.)	1
	Installation report (For Europe except U.K.)	1
15	Consumable parts kit	
	Developer	1
	Toner for installation	1

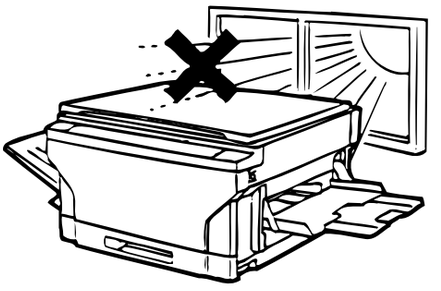
2. Installation

Installation conditions

The following installing conditions must be satisfied to assure the normal operations of the machine.

(1) Environment

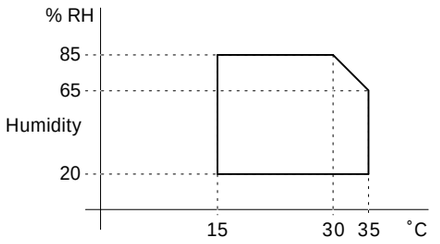
1 **Keep the machine away from direct sunlight and avoid installation near a window or in a bright place.**
(Draw the curtain and close the blind shutter completely.)
The plastic parts and the original cover may be deformed by direct sunlight. Avoid installation near a window even with frosted glass.

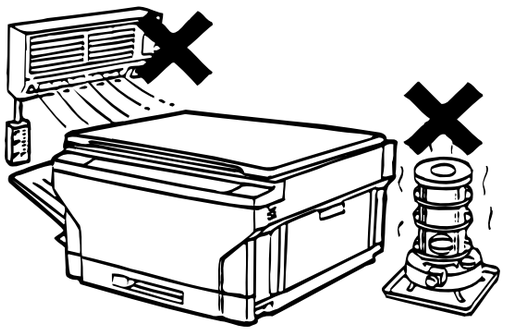


2 **Avoid installation in high temperature or high humitity environments. Also, avoid installation where temperature or humidity may change quickly. (e.g., near an air conditioner).**
Otherwise copy papers may be dampened and condensation may be generated in the machine. This may result in paper jams or poor copy quality.

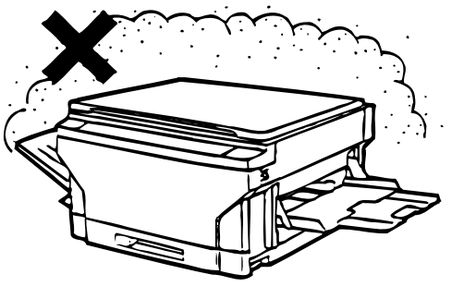
(Ideal conditions): The best suitable conditions for machine operation:
20˚C ~ 25˚C: 65 ±5%RH

(Temperature/humidity range): 15˚C ~ 30˚C, 20% ~ 85%
65% for 35˚C

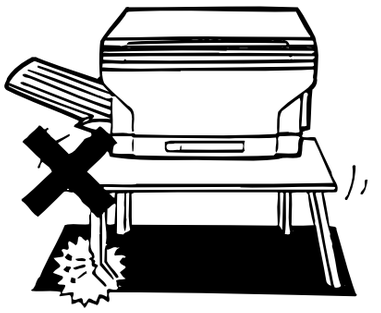




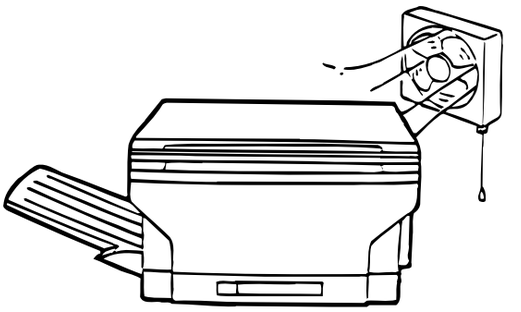
3 **Avoid installation where there is a lot of dust or vibrations.**
If dust enters the machine, it may degrade copy quality and cause malfunctions.



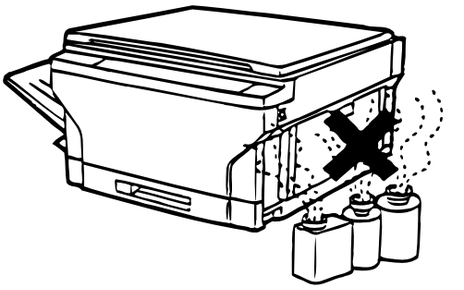
4 **Avoid installation on an unstable surface.**
To assure the proper operations, install on a level surface.



5 **Install in a well ventilated place.**



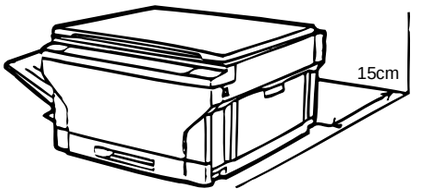
6 **Avoid installation where there is inflammable gases or ammonium gases.**
Installation near a diazonium copier may degrade copy quality and cause malfunctions.



7 **Install near a power outlet.**

(2) Space around the machine

Allow a space of about 15 cm (6 inches) between the rear side of the machine and the wall for ventilation of the cooling fan. Also allow sufficient space around the machine for operations.



(3) Installing table

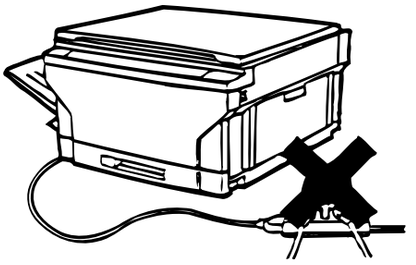
Use a level (UKOGM0054CSZZ) to install the machine horizontally.
(Allowable tilt: 5 mm between the front and rear frames)

(Note) If the machine is not installed horizontally, toner density control may not function properly. This may result in poor copy quality.

(4) Power source

1 The power source should be the rated voltage ±10% with the capacity corresponding to the max. power consumption.

2 Do not use an extension cord, or operate any other equipment from the same wall outlet.



(5) Grounding

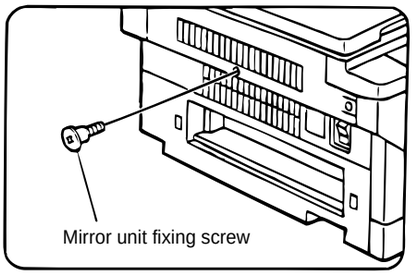
To avoid electrical hazard, use the properly grounded wall outlet only.

(Carrying the machine)
When carrying the machine, remove the copy tray and hold the dent portions on the bottom.

3. Installation procedure

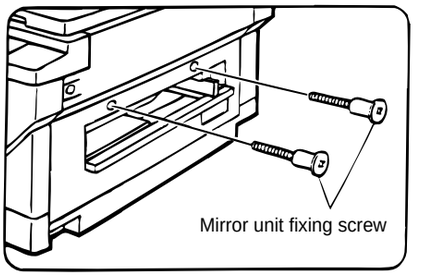
(1) Optical system unlocking

1 **Unlock the No.2/No.3 mirror unit.**
Remove the No.2/No.3 mirror unit fixing screw (1 pc.) on the left side of the copier.

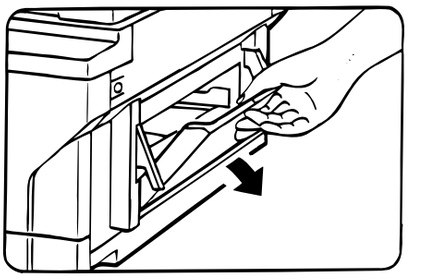


2 **Unlock the No.4/No.5 mirror unit.**

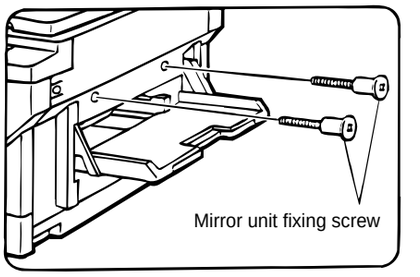
[In the case of SF-2014]
Remove the No.4/No.5 mirror unit fixing screws (2 pcs.) on the right side of the copier.



[In the case of SF-2114, SF-2214]
Open the paper feed tray on the right side of the copier.

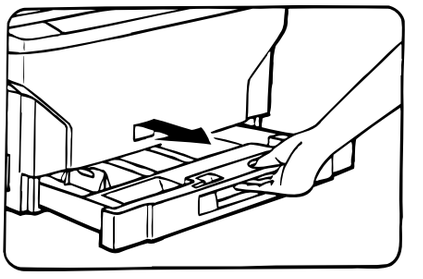


Remove the No.4/No.5 mirror unit fixing screws (2 pcs.).
Then close the paper feed tray.

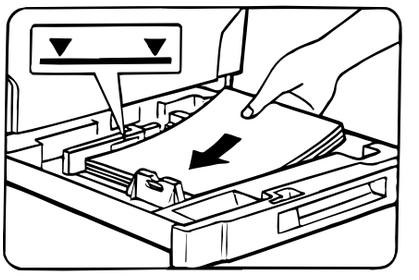


(2) Cassette setting

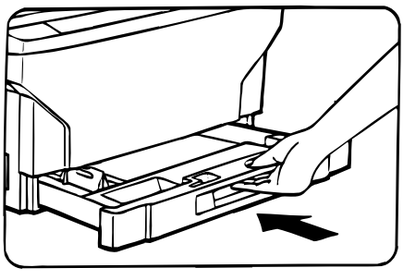
1 **Pull out the cassette.**
Lift the cassette and slowly pull it out from the copier until it stops.



2 **Loading copy paper.**
Set the copy papers in the cassette. Do not exceed the limit line indicator.

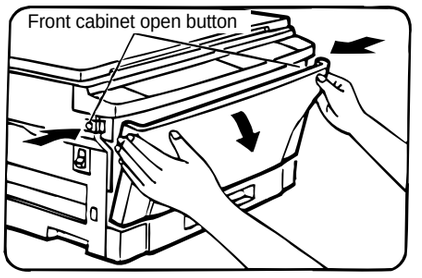


Gently insert the cassette fully into the copier.

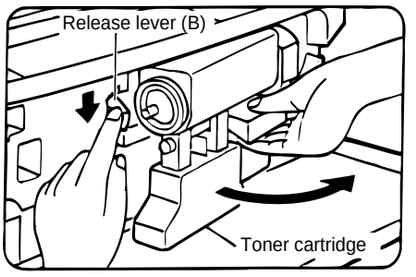


(3) Developer setting

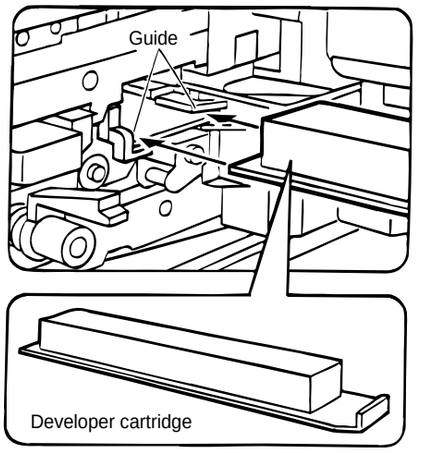
1 **Open the front cabinet.**
Press the front cabinet open buttons in the right and the left sides of the copier, and open the front cabinet.



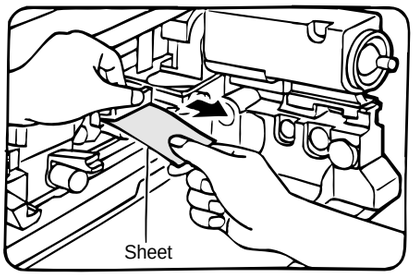
2 **Open the toner cartridge.**
While pressing the toner cartridge release lever (B), open the toner cartridge.



3 **Install the developer cartridge.**
Insert the developer cartridge along the developer guide.
Check to insure that the developer cartridge is securely locked.

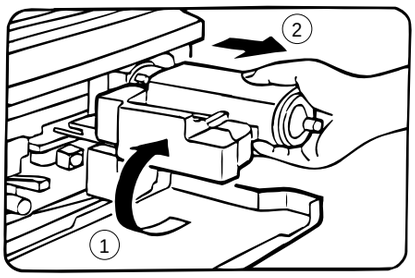


4 **Supply developer.**
Press and hold the developer cartridge in place and remove the developer cartridge sheet by pulling forcefully.
(Developer will be supplied.)

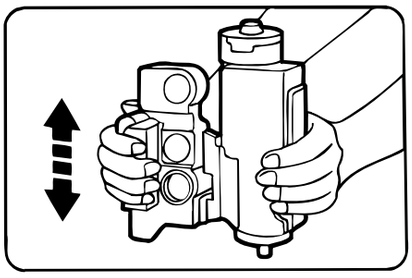


(4) Toner supply

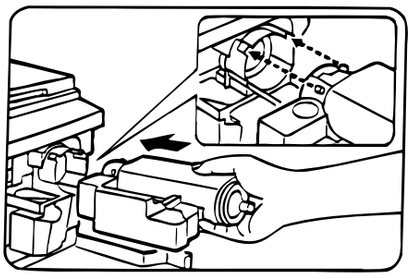
1 **Remove the toner cartridge.**
Slowly turn the toner cartridge clockwise and remove it.



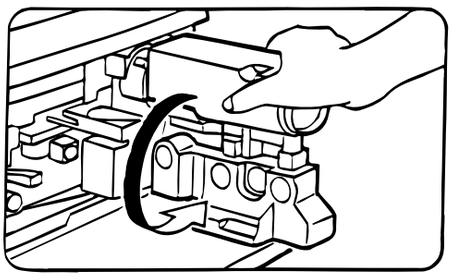
2 **Shake the toner cartridge.**
Shake the removed toner cartridge up and down a few times.



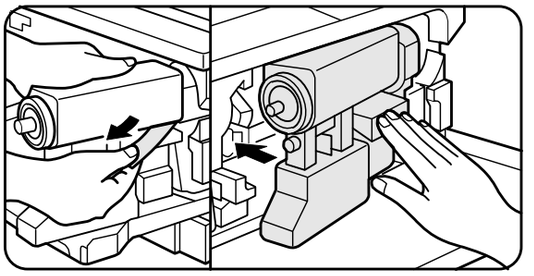
3 **Install the toner cartridge.**
Install the toner cartridge along the guide in the copier.



Turn the toner cartridge counterclockwise to lock it in position

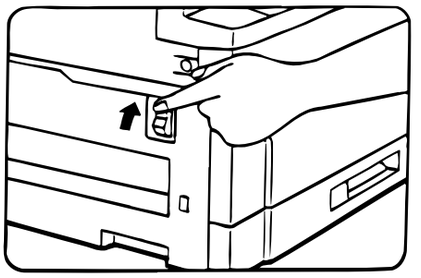


4 **Supply toner.**
Remove the toner cartridge sheet and supply toner.
(Toner will be supplied.)
Return the toner cartridge to the original position and close the front cabinet.



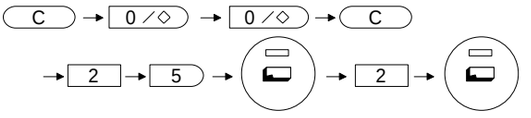
(5) Toner density sensor level check

1 **Turn on the power switch of the copier.**



2 **Adjust the developer level.**

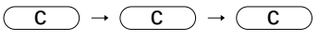
(a) Perform the key operations of simulation 25 sub 2.



With the above key operations, simulation 25 is performed and the developer is stirred for 3 minutes.

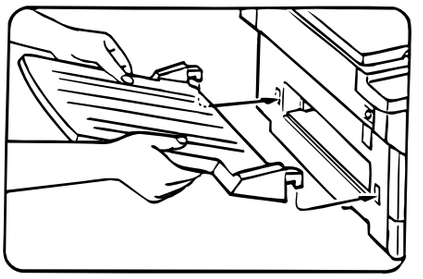
(b) After stirring the developer for 3 minutes, the toner density level is read by the main PWB.
During stirring, the toner density sensor level is displayed on the MULTI COPY display. (Range: 1 ~ 99)
[Note] If the simulation is cancelled during execution, the automatic reading cannot be performed. Do not cancel the simulation during execution.

(c) Press the CLEAR key three times to cancel simulation 25.



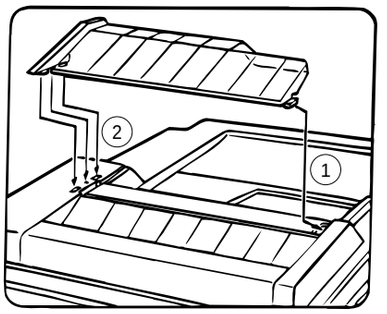
(6) Accessory attachment

1 **Attach the copy tray.**



2 **Attach the document tray.**

[SF-2214 only]



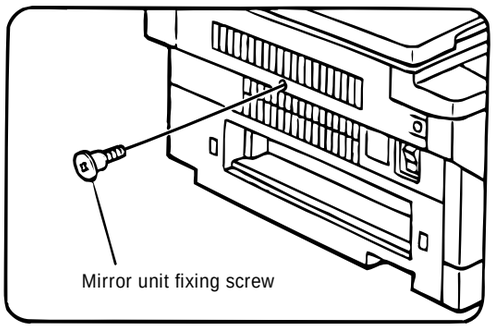
4. Locking procedure for transit or repacking

In general, reverse the procedures in "3. Installation procedure." For the optical system lock, perform the following procedure.

(1) No.2/No.3 mirror unit (Mirror base B) lock

1 Perform locking with the unit at its home position (normal copy position) with the power ON and with the mirror stopped and with the external covers installed.

2 Lock the unit with the mirror unit fixing screw. (The hole in the left cabinet)

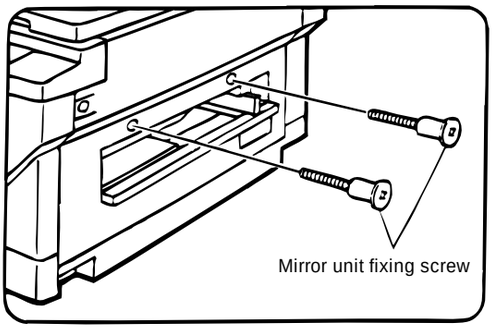


(2) No.4/no.5 mirror unit (Mirror base C) lock

[SF-2014]

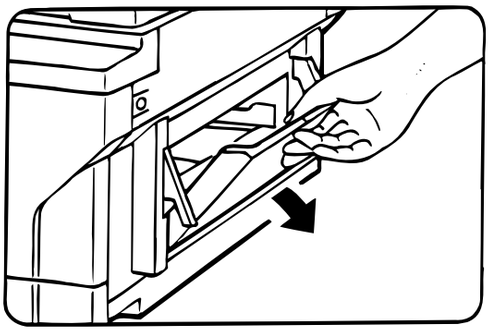
1 Perform locking with the unit at its home position and with the external fitting installed.

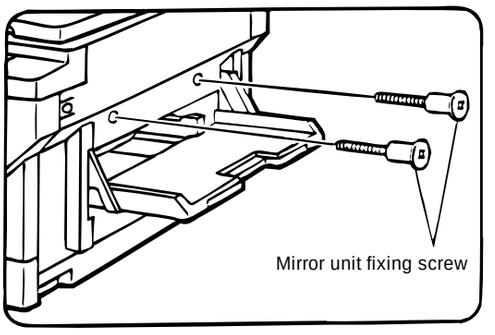
2 Lock the unit with two mirror unit fixing screws. (The hole in the right cabinet)



[SF-2114/2214]

1 Turn off the power at the 64% position. Perform locking with the external fitting installed.



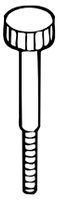


2 Open the paper feed tray at the right side of the body, and fix the unit with two fixing screws. (Two holes in the right cabinet)

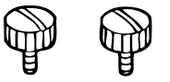
5. Optional paper feed unit (SF-CM14), Installation Manual

For use with compatible SHARP copies.
See SHARP copier Installation Manual to determine suitability.

Included parts



Mounting screw A,
1 pc



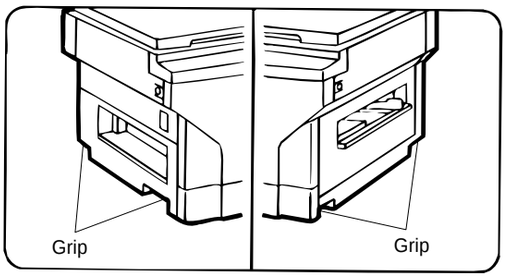
Mounting screw B,
2 pc

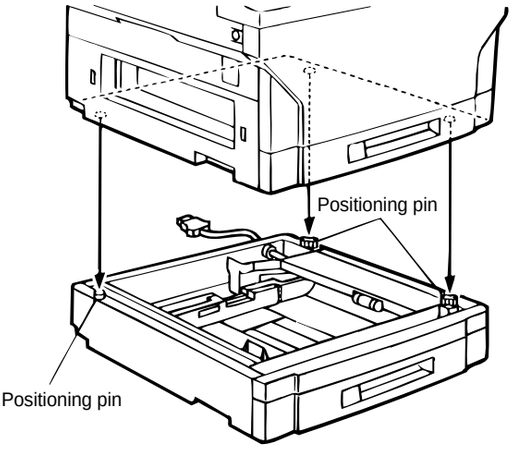
[SF-2114/2214 only]

(1) Set the main copier unit on the paper feed unit.

1 Lift the main copier unit by the grips, place it upon the paper feed unit, and slip the positioning holes (3 locations) on the bottom of the main copier unit over the 3 positioning pins on the paper feed unit.

[NOTE] This procedure should always be performed by two people.

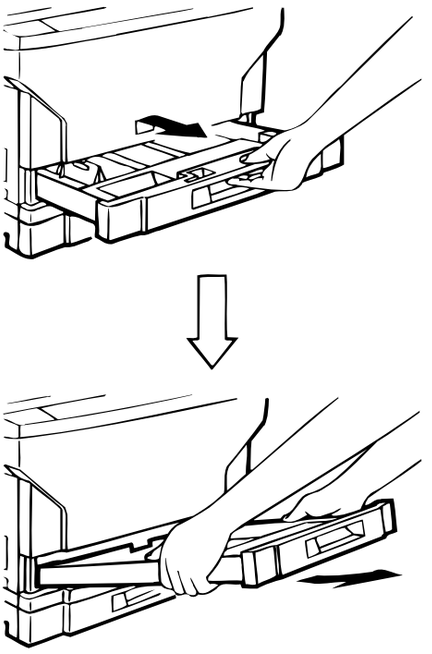




(2) Remove the paper tray from the main copier unit.

1 While lifting up slightly, gently pull out on the paper tray until it stops.

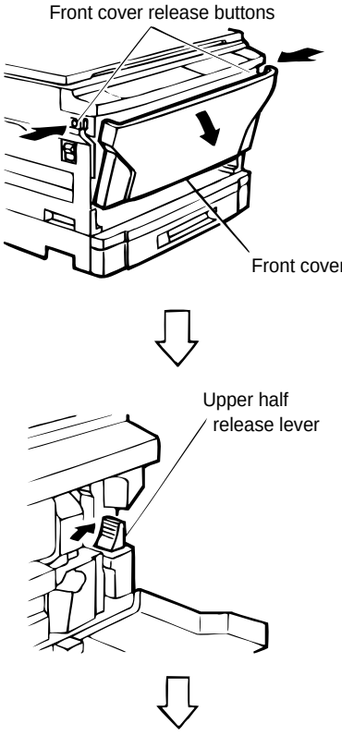
2 Then, lift up on the paer tray with both hands and remove it.

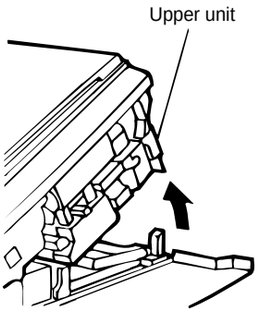


(3) Open the upper unit of the main copier unit.

1 Press the release buttons on the left and right sides of the main copier unit's front cover, then open the front cover.

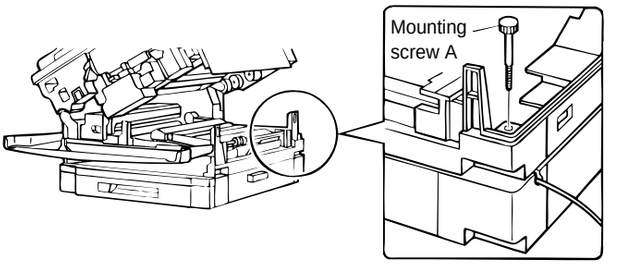
2 Push the upper half release lever (green) to the right and down, then gently open the upper unit.





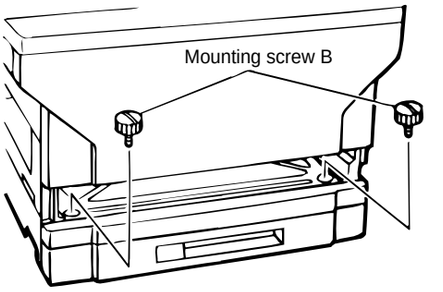
(4) Connect the main copier unit and the paper feed unit.

1 Secure mounting screw A (1 pc) in the main copier unit (1 location).



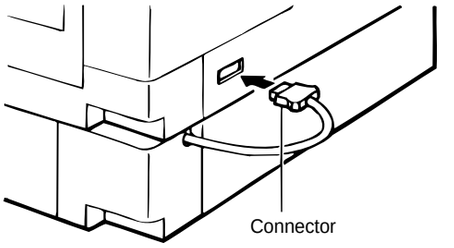
Then, gently close the upper unit and front cover.

2 Connect the paper feed unit and the main copier unit by securing mounting screw B (2 pcs) in the mounting holes (2 locations) located in the slot from which the paper tray was removed.



* After these procedures have been completed, reload the paper tray which was removed in step 2.

3 Insert the paper feed unit connector into the jack on the side of the main copier unit.



6. Optional multi bypass feeder unit Installation Manual

For use with compatible SHARP copiers.
See SHARP copier Installation Manual to determine suitability.

(1) Open the upper unit of the main copier unit.

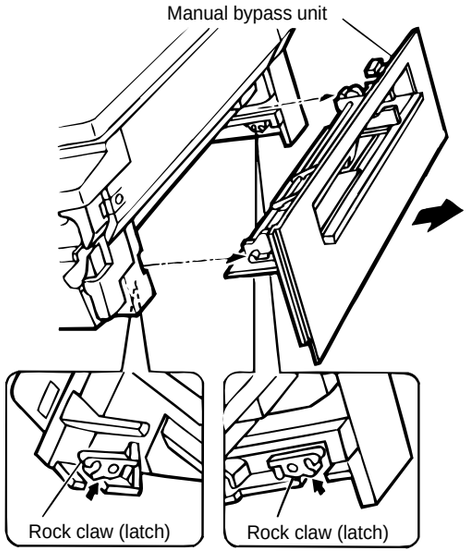
1 Press the release buttons on the left and right sides of the main copier unit's front cover, then open the front cover.

2 Push the upper half release lever (green) to the right and down, then gently open the upper unit.

(2) Release the lock for the manual bypass unit and remove the manual bypass unit.

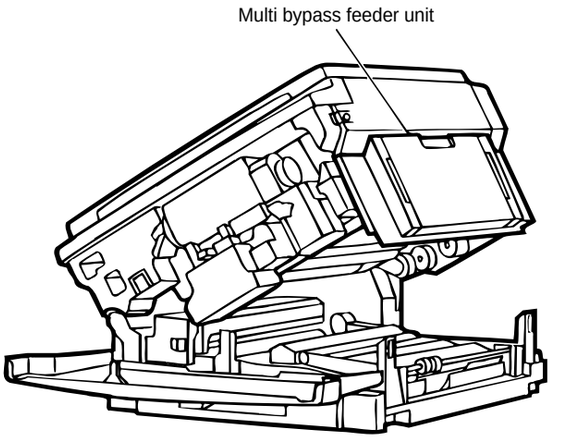
1 Release the manual bypass unit by pressing upward on the rock claws (green; 2 locations) which lock it in place in the main copier unit's upper unit.
The manual bypass unit will come out toward you slighly.

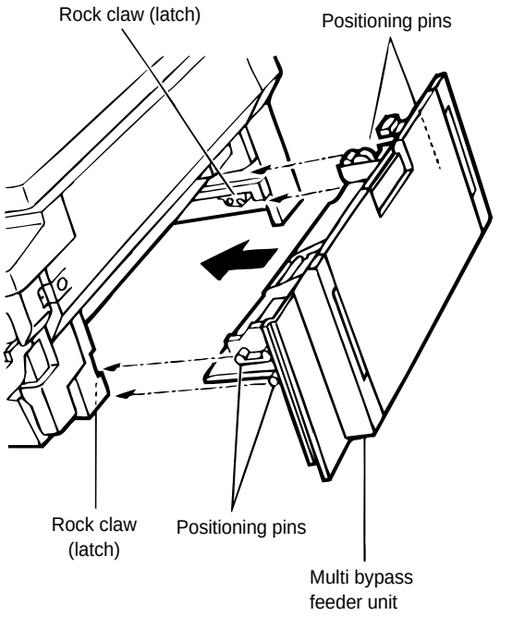
2 Pull out upon the manual bypass unit to remove it from the main copier unit.



(3) Mount the multi bypass feeder unit onto the main copier unit.

1 Slide the positioning pins which project from the multi bypass feeder unit in to the grooves in the main copier unit, then push the multi bypass feeder unit into place to in stall it.
At this time, to be sure that the multi bypass feeder unit is securely installed, push down once more on the fourcorners of the unit. (If it has not been securely installed, "CH" may appear in the COPIES MADE display when the power is turned on.)





2 Close the upper unit of the main copier unit.

[6] DISASSEMBLY AND ASSEMBLY

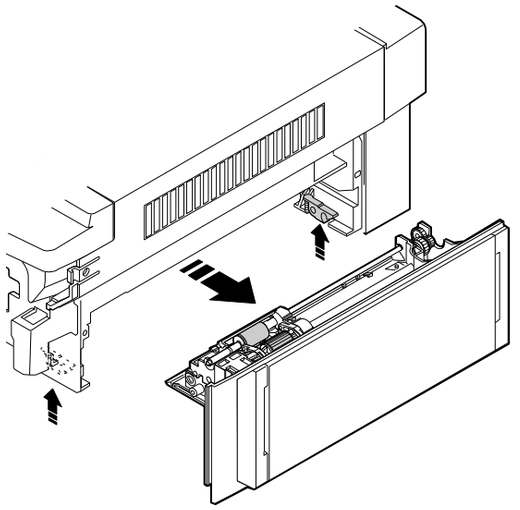
The descriptions of this chapter are divided into the following sections:

1. Paper feed section, paper transport section, power section
2. Manual paper feed section
3. Fuser section
4. Optical system
5. SPF section
6. Drum section
7. Developer section
8. Operation panel/medium cabinet
9. Major parts in the frame side

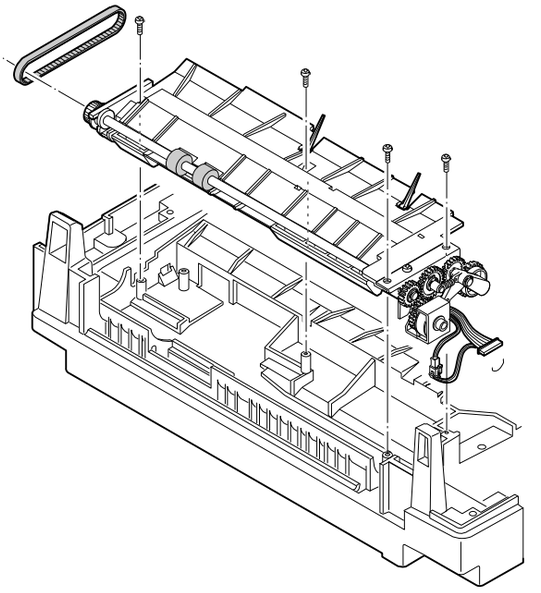
1. Paper feed section, paper transport section, power section

1-1. Paper feed unit

1 Open the front cover and open the body. Release the right and the left lock levers and pull out the manual paper feed unit.



2 Disconnect the CN-B connector of the lower PWB, remove the paper feed unit fixing screws (4 pcs.), and lift the paper feed unit to remove.

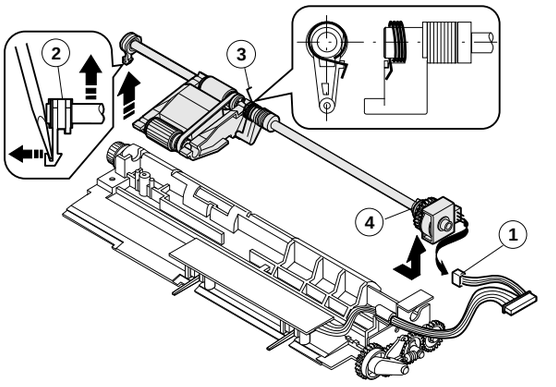


1-2. Paper feed roller ass'y removal

1 Disconnect the connector of the magnetic clutch in the rear frame side.

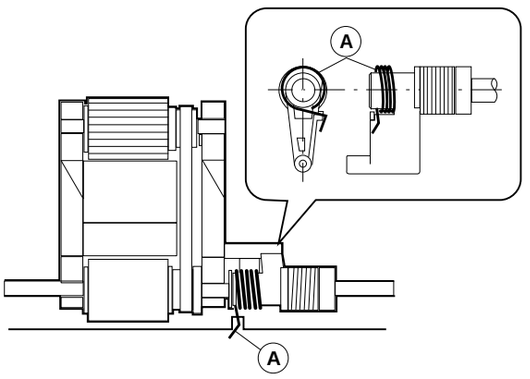
2 Remove the hook section of the paper feed roller bearing in the front frame side by using a screwdriver $.

3 Remove the roller release arm spring from the paper feed frame.

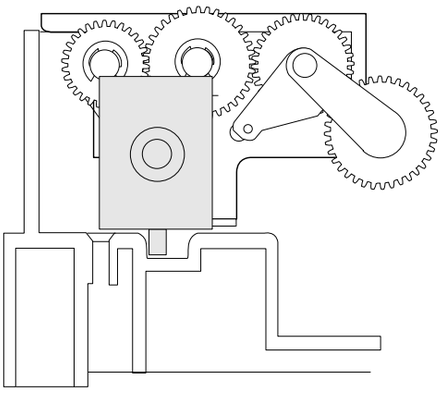


4 Remove the bearing in the rear frame and remove the paper feed roller ass'y.

Note for assembly (1): Hang the roller release arm spring on the spring hook of the roller release arm. Attach the paper feed roller ass'y to the paper feed unit, and hang the spring on the paper feed frame.

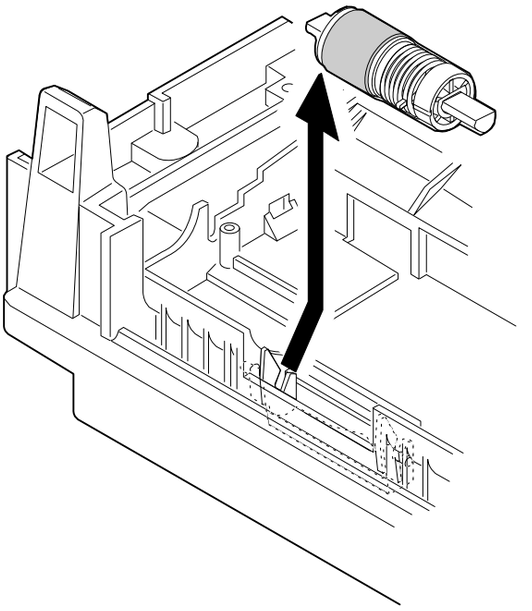


Note for assembly (2): Attach the paper feed roller ass'y so that the paper feed roller clutch faces the lower frame.
When attaching the paper feed unit, insert it in the base unit hole of the copier.



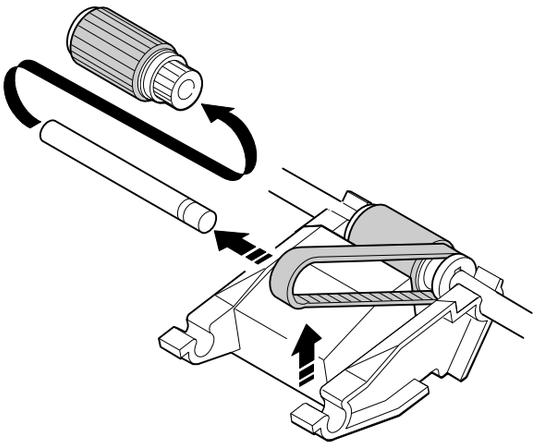
1-3. Separation roller

1 Remove the paper feed unit and remove the separation roller.

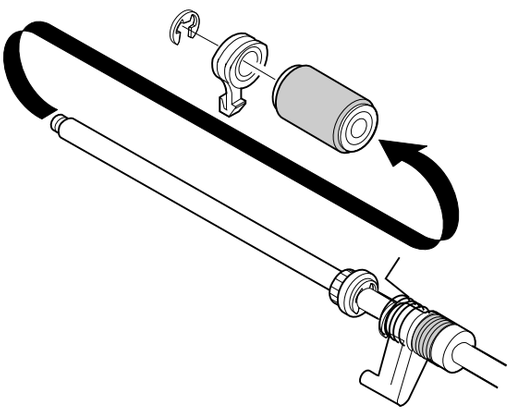


1-4. Takeup roller, paper feed roller

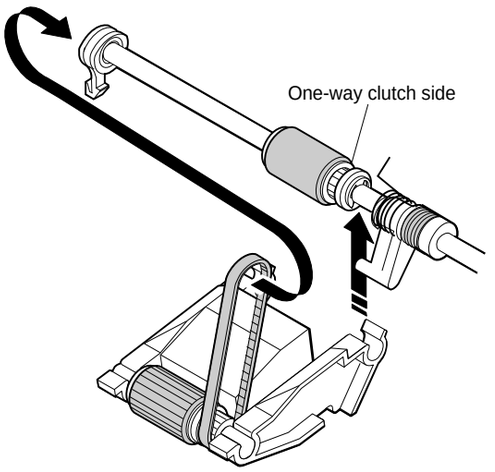
1 Remove the paper feed roller ass'y, and remove the takeup roller.



2 Remove the roller holder, the stop ring, and the bearing, then remove the paper feed roller.

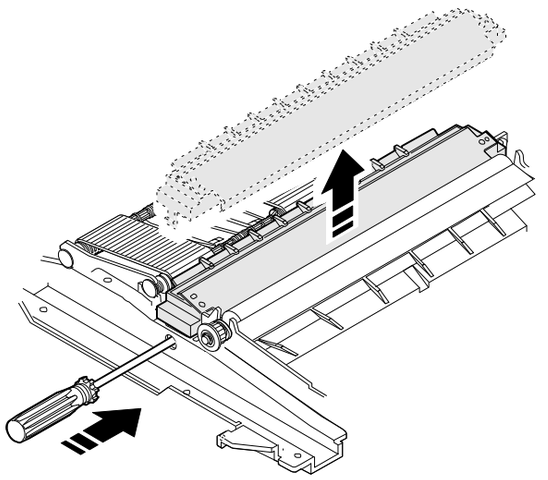


Note for assembly (1): Attach the paper feed roller so that the one-way clutch in the rear frame side. (Be careful to the installing direction.)
Attach the roller holder as shown below:

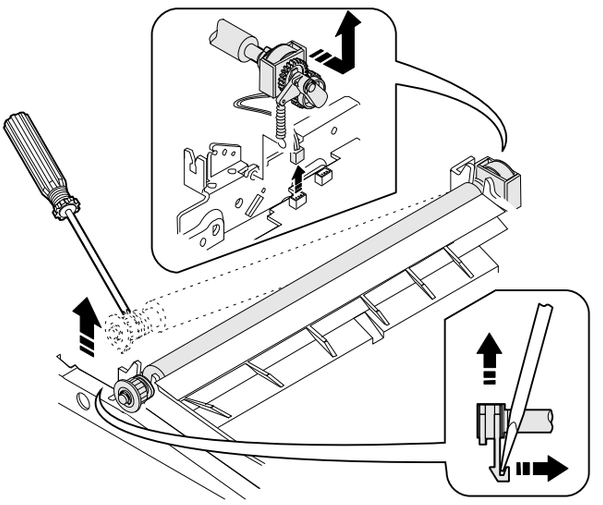


1-5. Resist roller

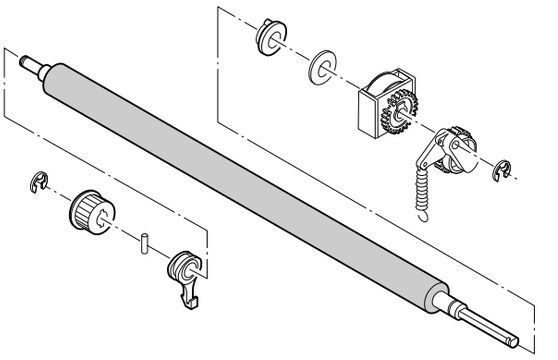
1 Insert a screwdriver into the front frame hole to release the lock pawl, and remove the TC case.



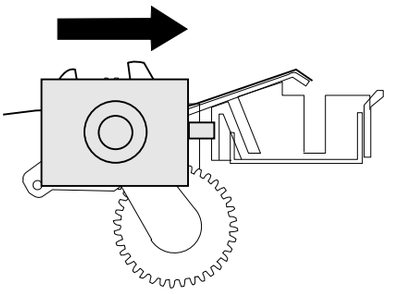
2 Disengage the hook section of the bearing in the front frame side, lift it upward and remove towards the upper frame side. Remove the spring in the rear frame side. Disconnect the CN-E connector in the lower frame PWB unit. Slide the resist roller ass'y to the rear frame side and remove it upwards.



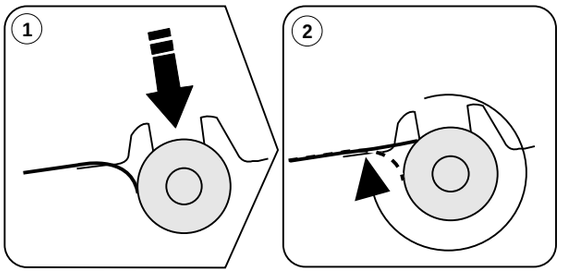
3 Remove the clutch, and the gear as shown below:



Note for assembly (1): When assembling, attach the positioning pin of the resist roller clutch in the direction of paper exit.



Note for assembly (2): When assembling the resist roller ass'y to the copier, attach it over the PS roller lower mylar and rotate the mylar and return the mylar to the original position. (To prevent deformation of the mylar)

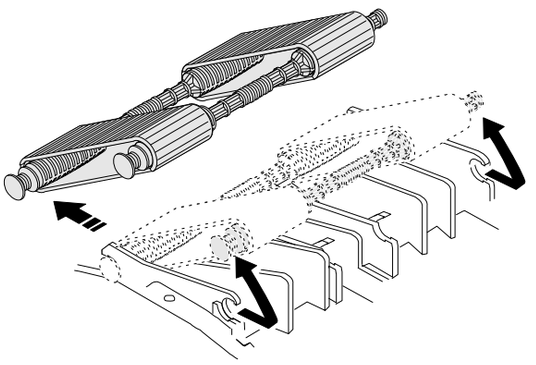


1-6. Transport belt

1 Remove the fuser unit.

2 Remove the TC case.

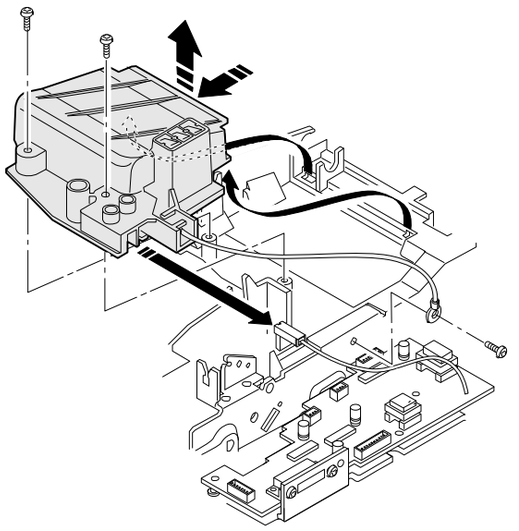
3 Remove the transport belt drive shaft in the TC case from the holder, and remove the drive shaft in the paper exit side, and remove the belt.



1-7. Socket holder unit

1 Remove the CN-C connector of the lower unit PWB, the grounding wire, and the red high voltage lead wire (for separation electrode) which in the socket holder.

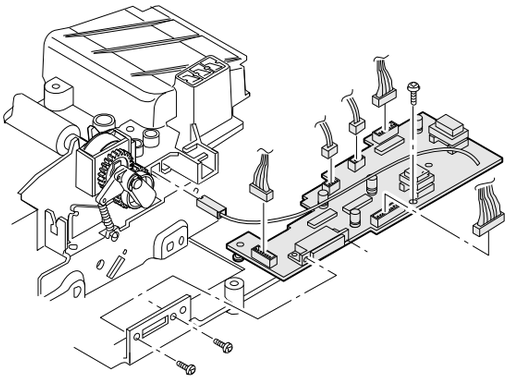
2 Remove the two fixing screws in the paper feed side, remove the pawl from the positioning hole in the paper exit side, and slide it in the direction of paper feed to remove.



1-8. Lower unit PWB

1 Open the body up, and remove the rear lower cabinet.

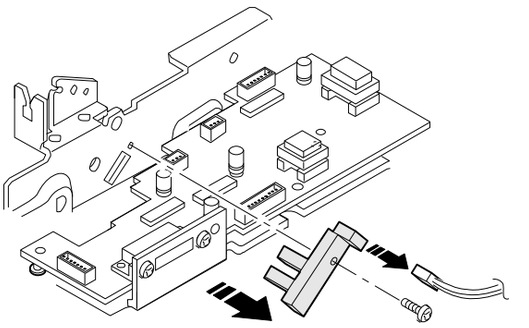
2 Remove the connector, the PWB fixing screw (1 pc.), and the CN-F fixing screws (2 pcs.). Slide the lower unit PWB to the front frame side and remove it upwards.



1-9. Cassette paper empty detector (CPED1)

1 Remove the rear lower cabinet.

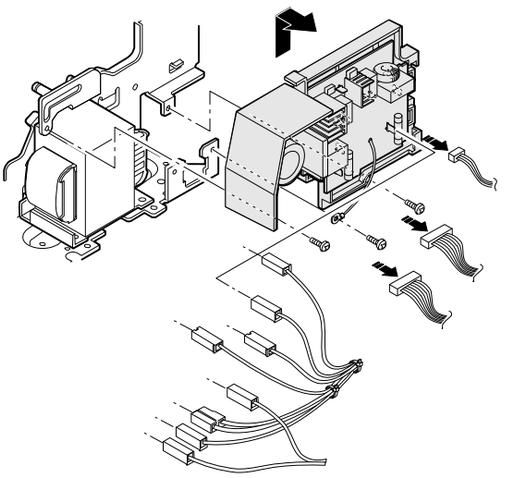
2 Remove the fixing screw and the CN-D connector, and remove CPED1.



1-10. Power unit

1 Remove the upper and the lower cabinets in the rear side.

2 Remove 12 connectors, two fixing screws, and the grounding wire. Lift the power unit to remove it upwards.



Note for assembly (1): When attaching the harness, be careful to the connector color and the lead wire color. (Carefully refer to the indication on the PWB for connection of the harness.)

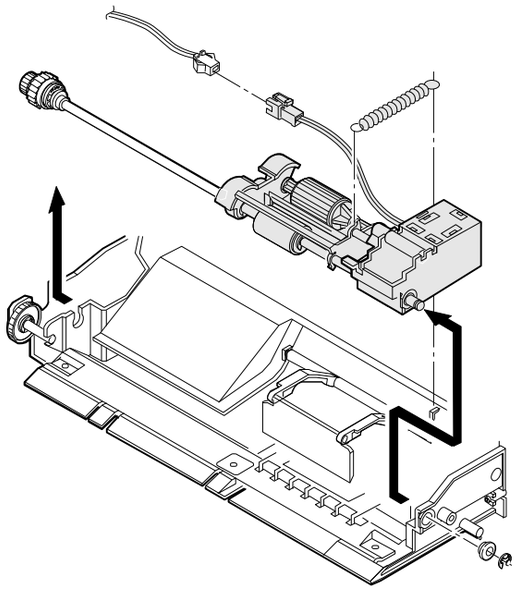
Example: YE (WH) → Yellow connector and white lead wire
YE = Yellow, WH = White, BK = Black,
GR = Green, BL = Blue

2. Manual paper feed section

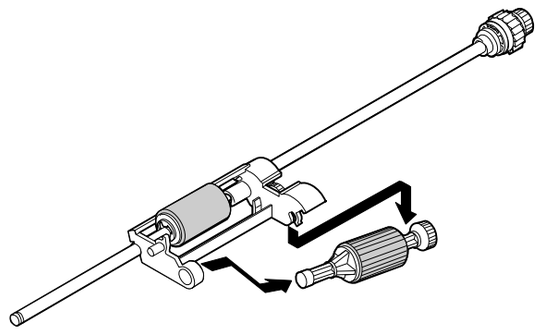
2-1. Manual paper feed roller, manual takeup roller

1 Remove the manual paper feed unit from the copier.

2 Remove the roller auxiliary spring, the manual solenoid connector, the E-rings in the front and the rear frames, and the bearing. Remove the manual roller ass'y together with the solenoid holder.

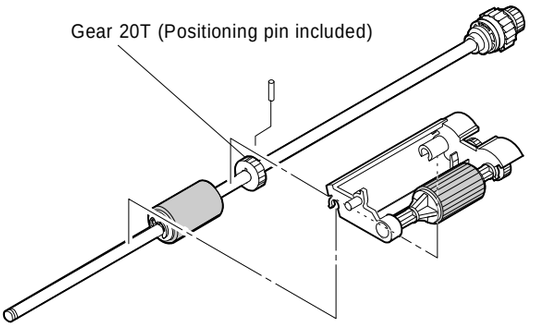


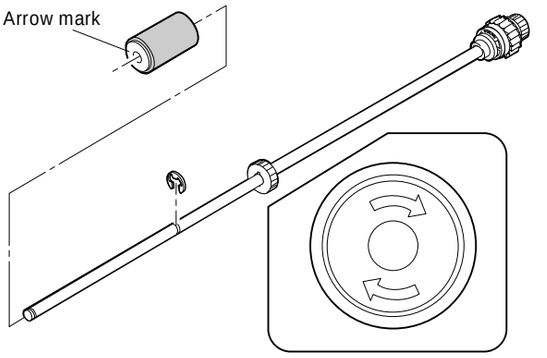
3 Remove the manual feed takeup roller from the manual arm.



4 Remove the manual arm and the E-ring, and remove the manual paper feed roller.

Note: Gear 20T has a positioning pin. When removing the manual arm, be careful not to miss the positioning pin.



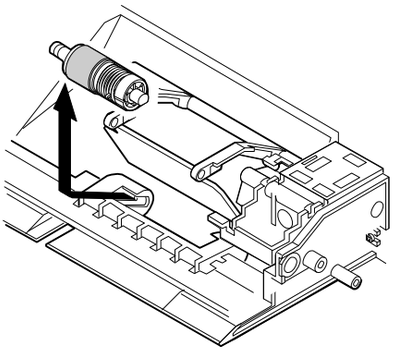


Note for assembly (1): The manual paper feed roller is provided with the one-way clutch. When attaching it, attach so that the arrow mark on the roller is in the E-ring side. (Be careful to the installing direction.)

2-2. Reverse rotation roller ass'y

1 Remove the manual feed roller ass'y.

2 Remove the reverse roller ass'y from the roller holder.



3. Fuser section

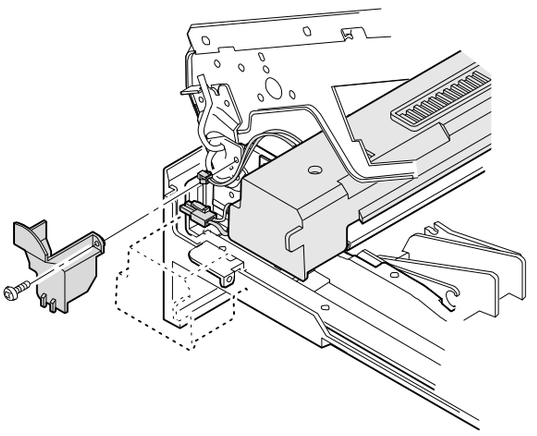
3-1. Fuser unit removal

1 Open the front panel

2 Remove the table glass.

3 Turn the open/close lever to the right and open the upper unit slowly.

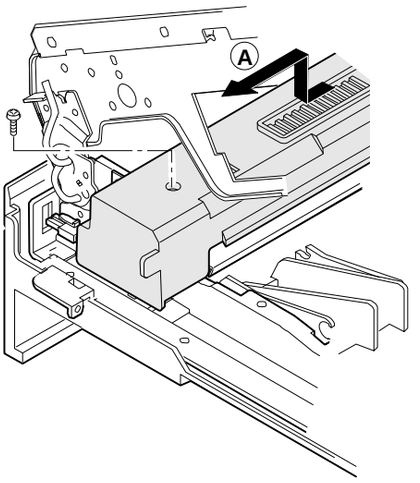
4 Remove the connectors (2 pin × 2), slightly lift the right side of the unit and pull it out.



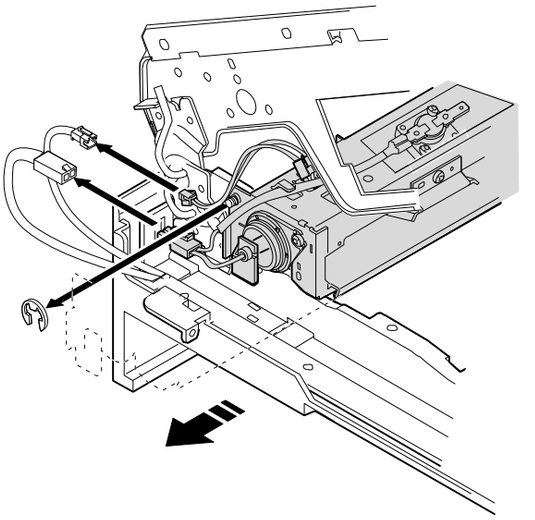
5 Move the copy lamp unit to the left of the body (the paper exit side).

6 Disconnect the connector (2-pin) of the dehumidifier heater which extends from the dark box cover. Insert a long screwdriver (+) into that port and remove the screw which is fixing the fuser cover.

7 Remove the fuser cover in the direction of arrow A .



8 Remove an E-ring and two connectors.



3-2. Heater lamp replacement

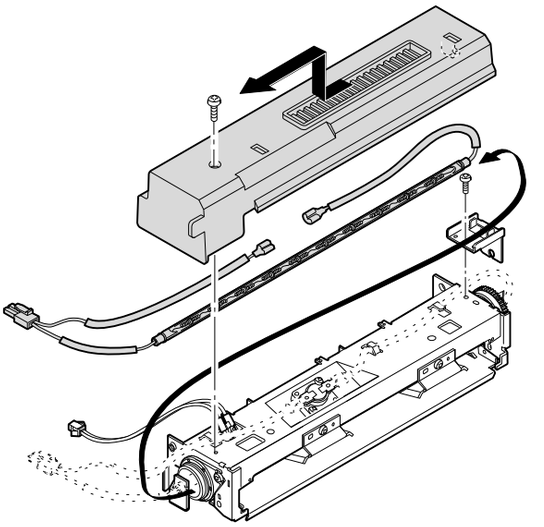
1 Remove the fuser cover fixing screw (1 pc.), and slide it to the front side, and remove it.

2 While pushing the projection of the Faston terminal connected to the thermostat, remove the lead wire from the connected section.

3 Remove the lamp holder fixing screw on the top of the rear frame, and remove the holder.

4 Pull out the heater lamp from the front frame.

For assembly, reverse the disassembly procedures.



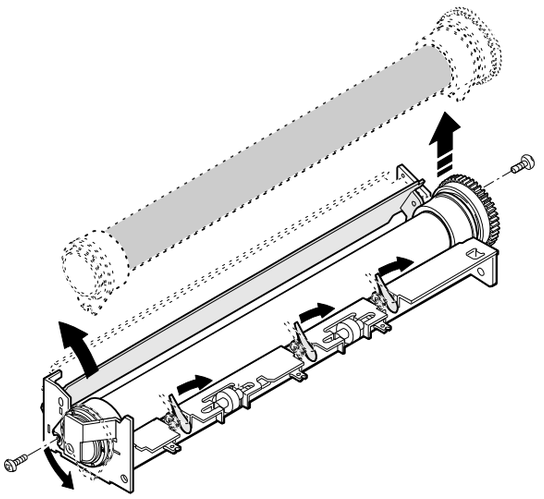
3-3. Upper heat roller ass'y removal

1 Remove the bearing fixing screws (2 pcs.) in the front and the rear frames.

2 Put the paper guide to the paper exit side and separate the separation pawl from the roller and fix it.

3 Rotate the fixing screw section of the bearing about 45 degrees below and pull it upwards.

For assembly, reverse the disassembly procedures.



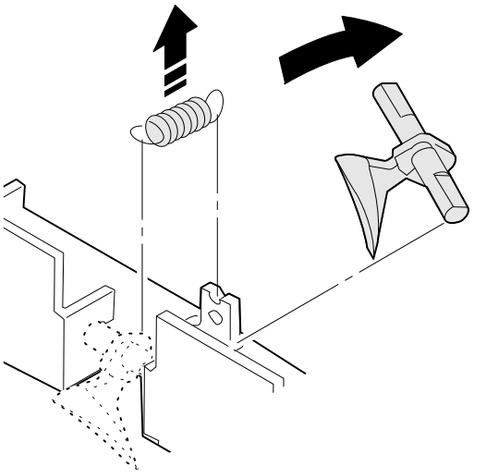
3-4. Upper separation pawl replacement

1 Remove the fuser unit and remove the cover.

2 Place the fuser unit so that the paper guide is in the lower side. (The separation pawl is in the upper side.)

3 Remove the tension spring, hold the tip of the separation pawl and remove it from the supporting section, and tilt it to remove.

For assembly, reverse the disassembly procedures.



3-5. Lower cleaning roller and lower heat roller replacement

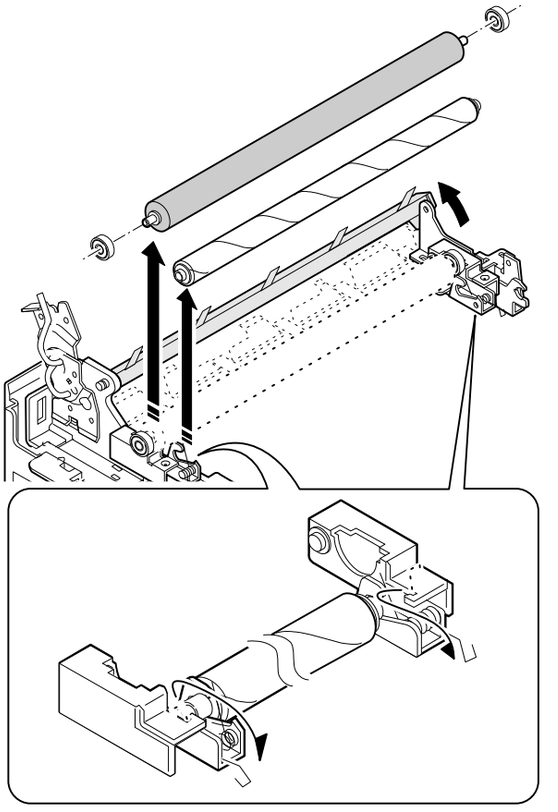
1 Remove the fuser unit.

2 Remove the CL roller springs (2 pcs.) which is fixing the lower cleaning roller from the hook section.

3 Remove the lower cleaning roller.

4 Lift the paper exit guide, and remove the lower heat roller without making contact between the roller and the scraper.

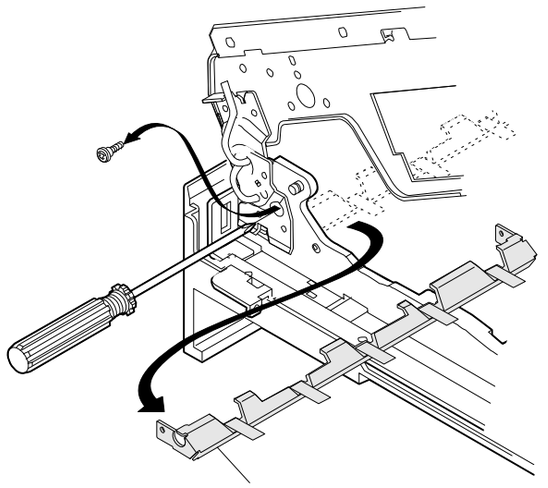
For assembly. reverse the disassembly procedures.



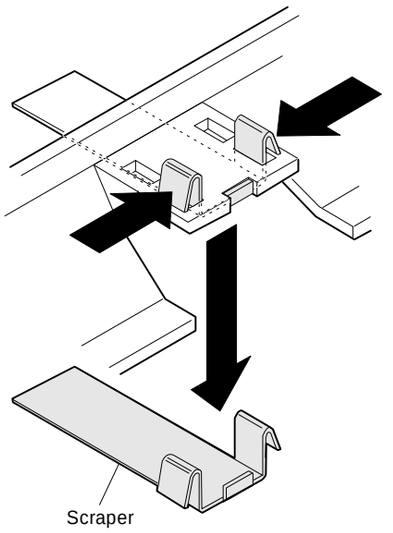
3-6. Scraper replacement

1 Remove the upper fuser unit.

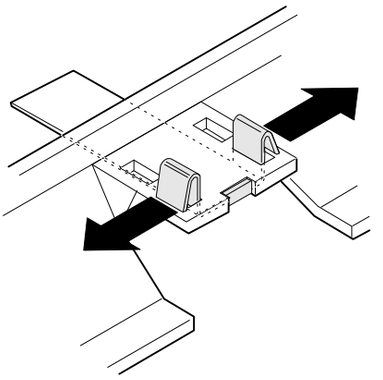
2 Remove the paper exit paper guide fixing screw (step screw) in the front frame side, and remove the paper exit paper guide.



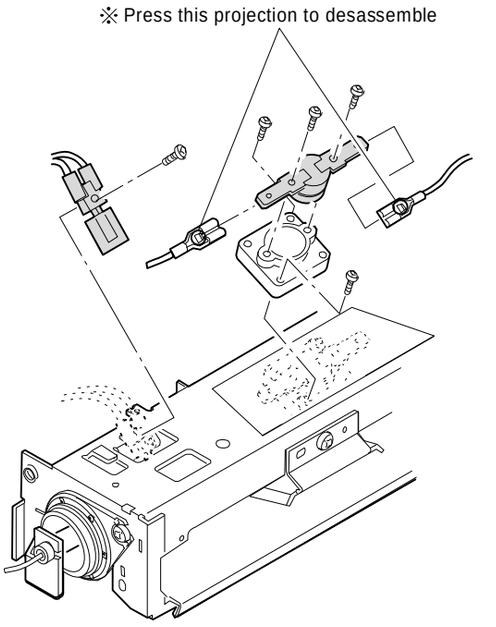
3 Remove the scraper hook section from the paper exit paper guide, and remove the scraper.



Note: When attaching the scraper, be careful not to deform it. Also be careful to check that the scraper hook section is completely inserted into the paper exit paper guide.



3-7. Thermistor/thermostat removal



*** Note for assembly**

- Be sure to bring the thermistor center into contact with the heat roller.
- Clean and remove foreign materials from the thermistor surface with alcohol.

4. Optical system

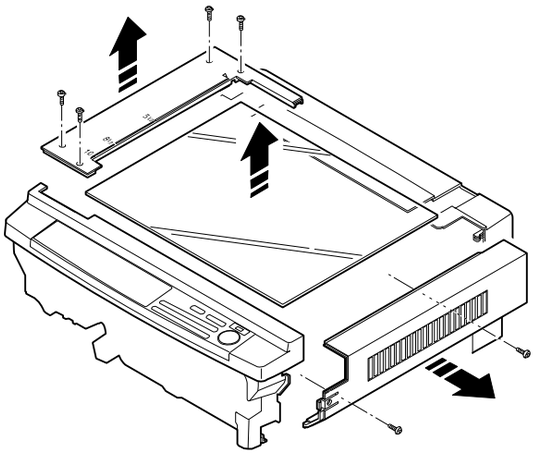
4-1. Copy lamp replacement

1 Open the body up. Release the lock lever of the manual paper feed unit and remove the manual paper feed unit.

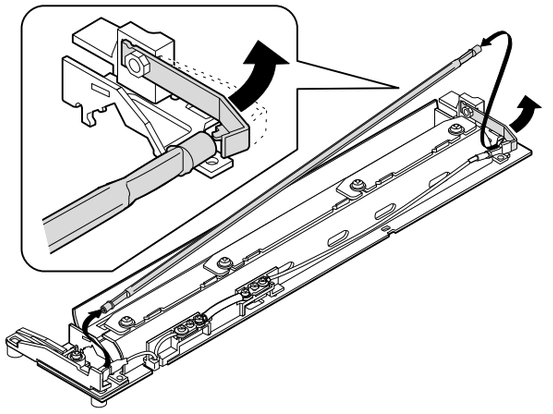
2 Remove the fixing screws (2 pcs.) in the right upper cabinet, and remove the right upper cabinet.

3 Remove the fixing screws (4 pcs.) of the glass holder, and remove the glass holder.

4 Remove the table glass.



5 While pushing the copy lamp electrode in the rear frame, remove the copy lamp.



For assembly, reverse the disassembly procedure.

Note: Be careful to the direction of the copy lamp installation.

4-2. Copy lamp unit replacement

1 Remove the manual paper feed unit, the right upper cabinet, the glass holder, the table glass, and the operation panel.

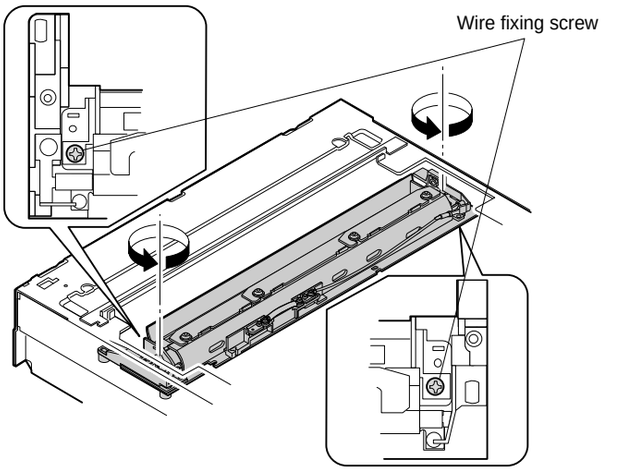
2 Move the copy lamp unit to the frame notch (refer to the figure).

3 Remove the terminal section of the copy lamp lead wire. (One screw and insertion terminal)

4 Loosen the fixing screw of the front and the rear frame wire, fixing plate and remove the wire from the copy lamp unit.

5 Slide the whole unit forward, and remove the rear frame side upwards.

For assembly, reverse the disassembly procedures.



Note: When the copy lamp unit is removed, the position adjustment must be required when attaching again. Refer to the adjustment item for the work.

4-3. Mirror base drive wire replacement

<Removal>

1 Remove the manual paper feed unit, the right upper cabinet, the glass holder, the table glass and the operation panel.

2 Remove the fixing screws (2 pcs.) of the left upper cabinet, and slide to the rear frame side to remove the cabinet.

3 Loosen the fixing screw of the copy lamp unit wire fixing plate, and remove the wire from the unit.

4 Remove the tension spring (7 in the figure) of the mirror base drive wire in the paper exit side from the hook section.

5 Slightly shift the mirror base to the paper feed side, and remove the terminal 1 of the mirror base drive wire.

6 Remove the wire fixing screw of the drive pulley.

<Installation>

1 Set the mirror base to the positioning plate position.

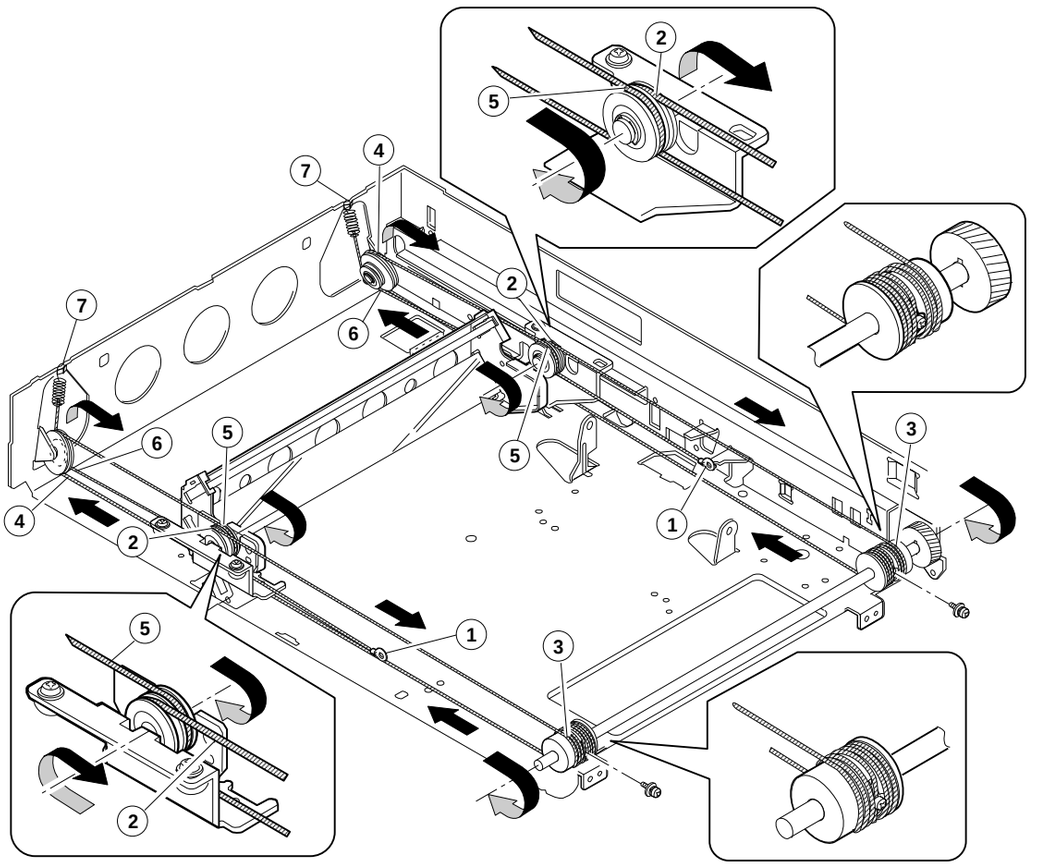
2 Set the terminal side of the mirror base drive wire on the hook section 1 , turn the mirror base pulley 2 outside to wind the wire around the drive pulley from the above.

3 Wind the wire 8 turns from the outside to the inside of the drive pulley, and put the 7th turn into the groove, and fix it with a screw temporarily.

4 Pass the wire under the mirror base and wind around the paper exit pulley (the larger one).

5 Pass the wire to the inside of the mirror base pulley, and pass through the paper exit pulley (the smaller one), then fix the tension spring to the hook section 7 .

6 Check that the mirror base is in contact with the positioning plate, and tighten the wire fixing screw of the drive pulley.



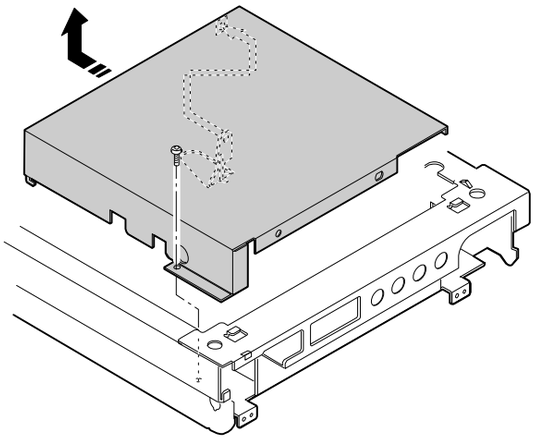
Note: After replacement of the mirror base drive wire, perform the vertical skew copy adjustment, the focus adjustment, and the horizontal skew copy adjustment.

4-4. Lens and lens drive wire replacement (Only the zoom function model)

<Removal>

1 Remove the manual paper feed unit, the right upper cabinet, and the table glass.

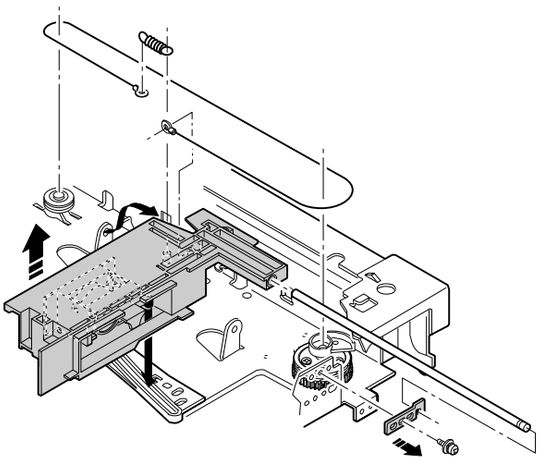
2 Remove the dark box cover fixing screw (1 pc.) and the cover.



3 Shift the lens carriage unit to the paper feed side.

4 Remove the tension spring of the lens drive wire from the hook section, and remove the wire.

5 Remove the shaft mounting plate in the paper feed side, and remove the shaft and the carriage unit.



<Installation>

1 Pass the lens drive shaft through the carriage unit, and set the shaft to the shaft support section of the base plate.

2 Fix the shaft mounting plate in the paper feed side.

3 Store the lens unit projection in the lens guide rail.

4 Set the lens drive wire on the carriage unit.

5 Align the No.4/5 mirror zoom cam and the carriage unit to the normal copy position

6 Manually hold and fix the carriage unit, and wind the wire around the drive gear.

7 Wind the wire around the pulley, pull it slightly and attach the spring to it, and set the spring on the hook section.

Note: When the lens unit is removed, the right angle adjustment, the magnification ratio adjustment, and the focus adjustment are required.

Note: When the lens drive wire is removed, the magnification adjustment and the focus adjustment are required.

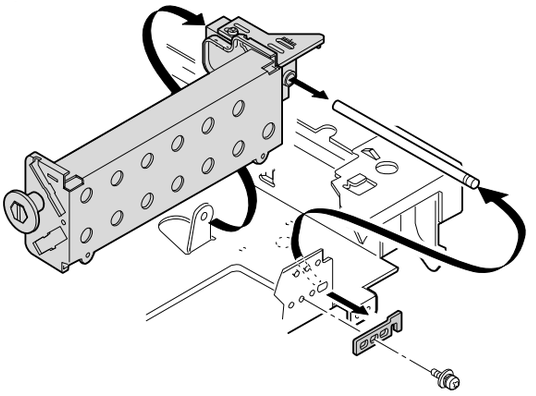
4-5. No. 4/5 mirror unit and peripheral parts replacement

1 Remove the manual paper fed unit, the right upper cabinet, and the table glass.

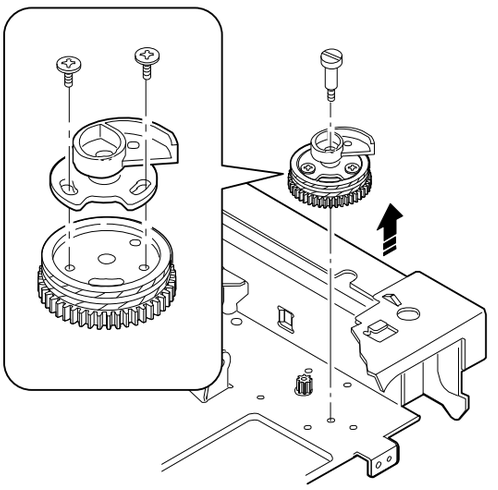
2 Remove the dark box cover fixing screw (1 pc.) and remove the cover.

3 Remove the mirror holder spring.

4 Remove the shaft mounting plate, pull out the shaft towards the paper feed side, and remove No. 4/5 mirror unit.

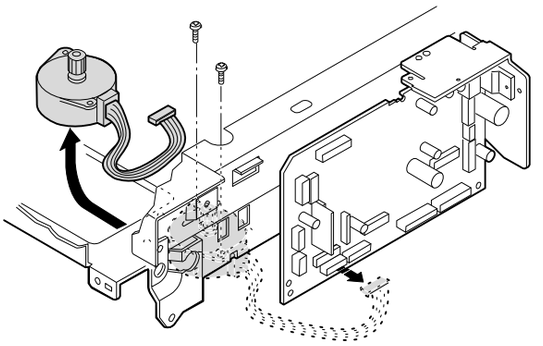


5 Remove the fixing screw of the center section of the drive pulley, and remove the pulley.



6 Remove the CN-E connector of the main PWB, remove the drive motor fixing screws (2 pcs.), and remove the No.4/5 mirror unit from the mounting section (square hole in the base plate).

For assembly, reverse the disassembly procedures.



4-6. Optical unit removal

1 Remove the drum unit and the developer unit.

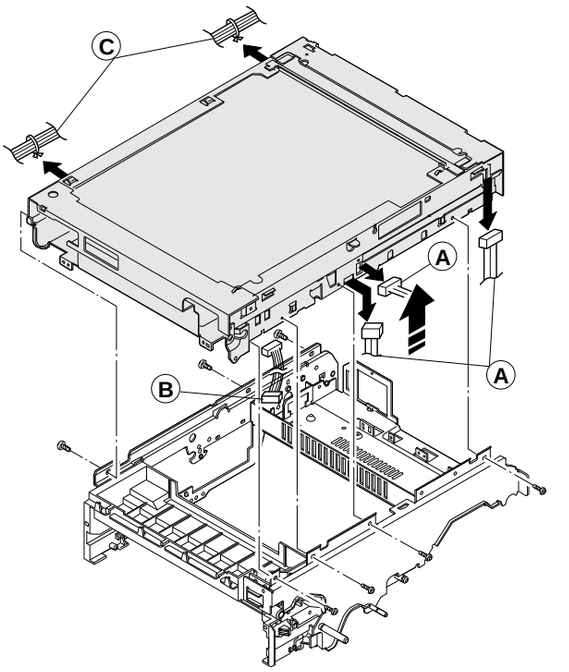
2 Remove the right cabinet, the left cabinet, the operation panel, the medium cabinet, and the rear cabinet.

3 Remove three connectors A from the sensors in the rear as shown in the figure.

4 Remove connector B between the mirror motor and the main PWB (CN-C).

5 Remove two snap bands C which are binding cables of the operation panel.

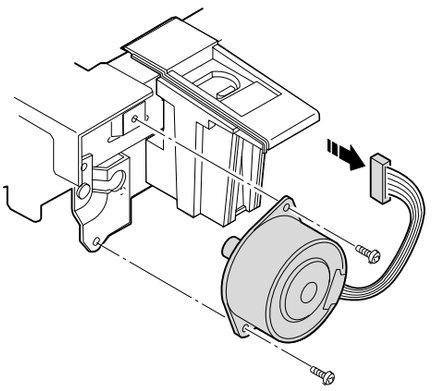
6 Remove the optical unit .



4-7. Other parts in the optical system

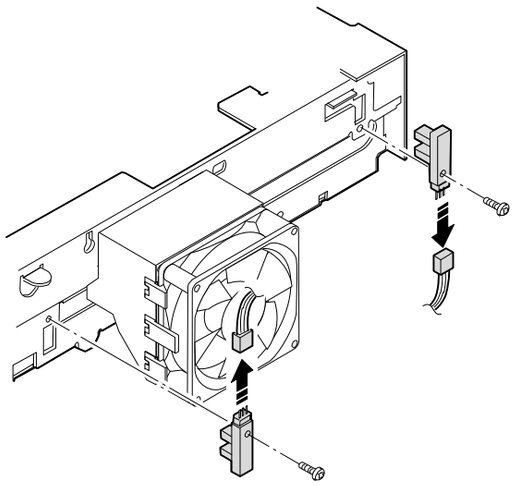
1 Remove the rear upper cabinet.

2 Remove the CN-C connector of the main PWB and the fixing screws (2 pcs.), and pull out the mirror motor towards the rear frame.

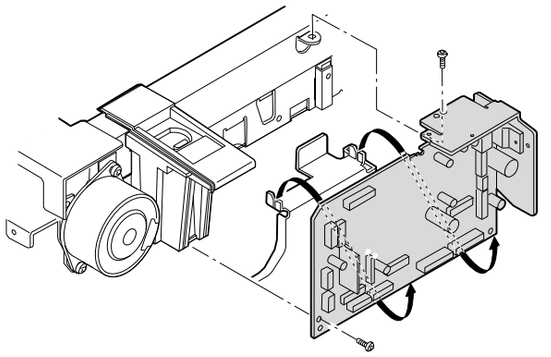


3 Remove the connector and the fixing screw (1 pc.), and remove the mirror home position sensor (MHPS) towards the rear frame.

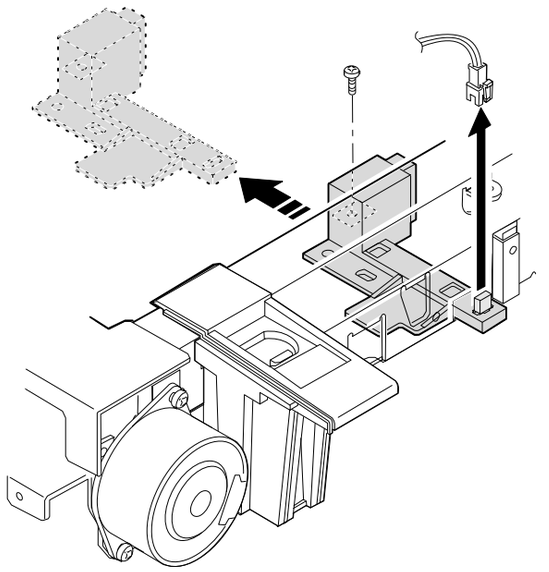
4 Remove the connector and the fixing screw and pull out the lens home position sensor (LHPS) towards the rear frame.



5 Remove the fixing screw (1 pc.) of the upper frame and the screw and the connector in the rear frame, then remove the main PWB.



6 Remove the connector, the manual paper feed unit, the right upper cabinet, the table glass, and the dark box cover. Remove the fixing screw from the above and remove the AE sensor towards the front frame side.

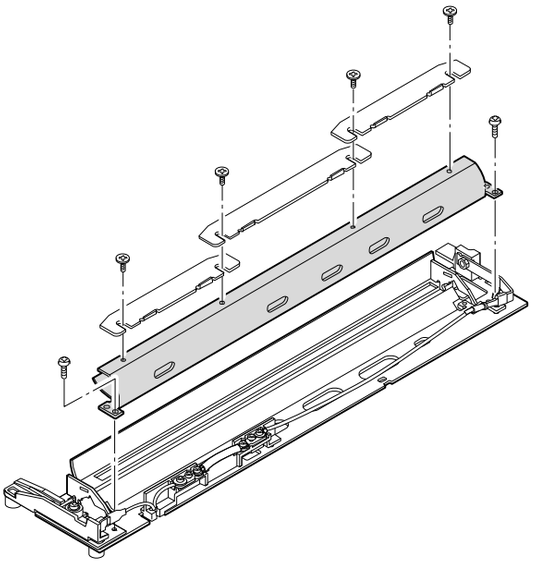


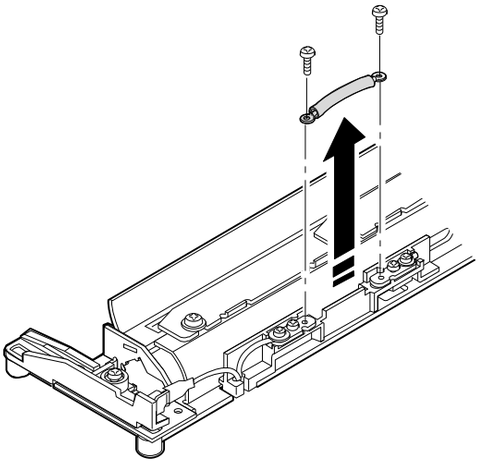
For assembly, reverse the disassembly procedures.

4-8. Light adjustment plate/temperature fuse removal

1 Remove the document glass.

2 Remove the parts as shown in the figure.



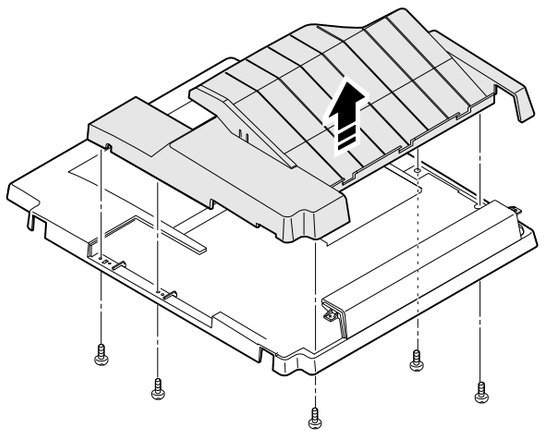


5. SPF section

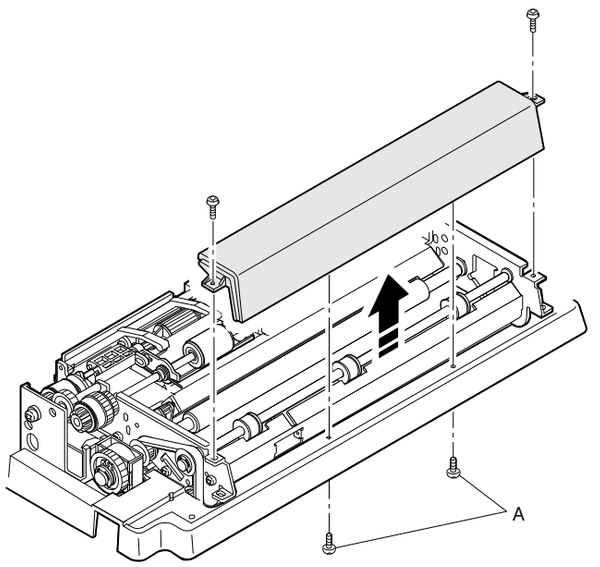
5-1. SPF mechanism removal

1 Open the OC cover, and remove the SPF cover fixing screws (5 pcs.).

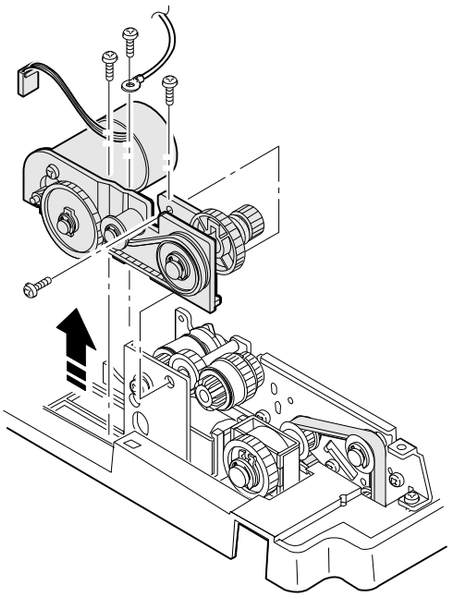
2 Remove the SPF upper cover.



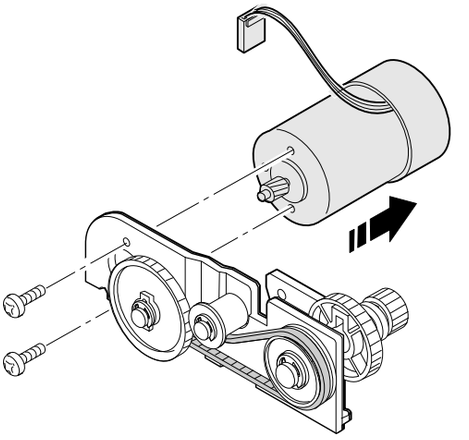
3 Remove two fixing screws of paper exit reverse paper guide.



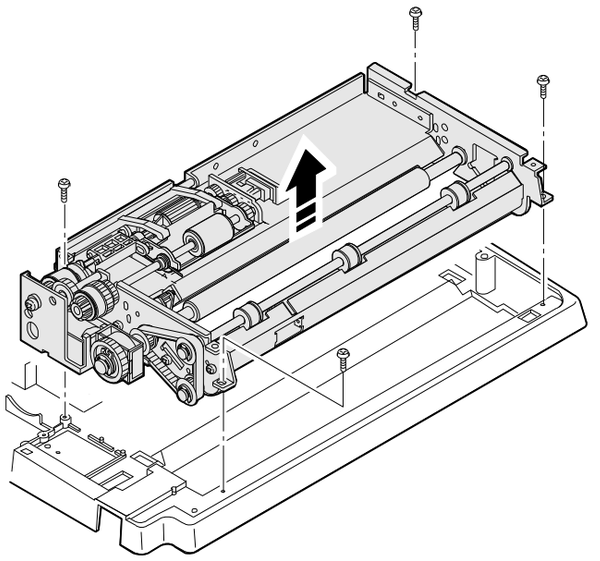
4 Remove the SPF motor ass'y fixing screws (4 pcs.) and the CN-C connector (4 pin) of the SPF control PWB. Then remove the SPF motor ass'y.



(Reference)
The SPF motor can be removed by removing two screws from the SPF motor ass'y.



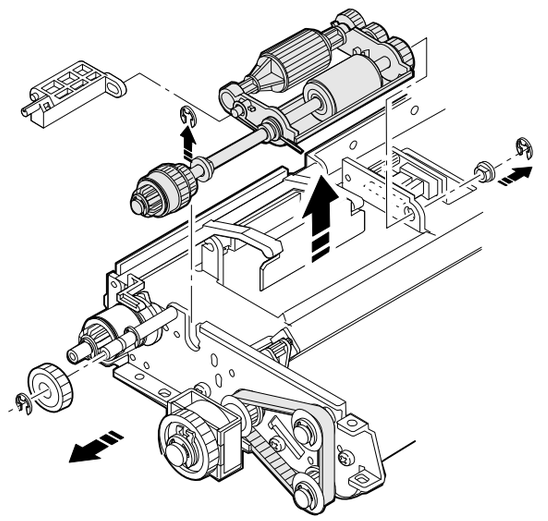
5 Remove four screws from the SPF mechanism, the 2-pin connector from the clutch, the 2-pin connector from the SPF cover open/close sensor, the CN-C (16-pin) connector from the SPF control PWB, then remove the SPF mechanism.



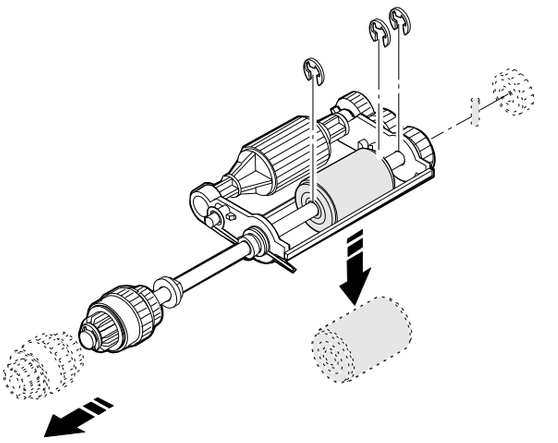
5-2. Paper feed roller/takeup roller replacement

1 Remove the SPF upper cover as shown in "5-1-1 , 2 ."

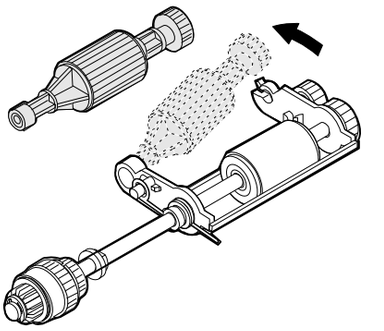
2 Remove the E-rings (3 positions) which are fixing the paper feed roller ass'y, slide the bearing, and remove the paper feed roller ass'y.



3 Remove the E-rings (3 pcs.), slide the gear to the clutch once, and pull out the pin inside the gear. Then the gear and the paper feed roller can be removed.



4 Since the takeup roller is of the insertion type, remove it from the grip side.



For assembly, reverse the disassembly procedure.

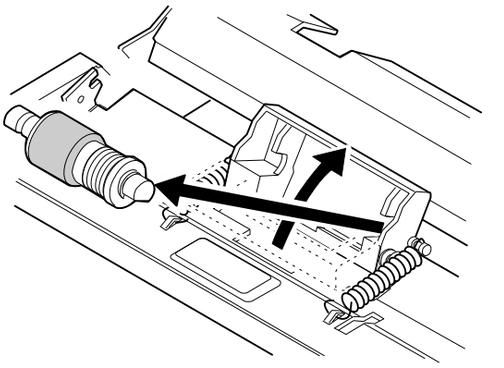
Note: The paper feed roller is provided with the one-way clutch. Be sure to attach so that the one-way clutch is in the front frame side.

5-3. Reverse roller (ass'y) replacement

1 For replacement of the reverse roller, the SPF unit must be removed. For that purpose, remove the front frame side fixing screws (2 pcs.) and the connector (one position).

2 Remove the rear frame side fixing screws (2 pcs.), and disconnect the CN-B connector of the SPF control PWB. Then put the SPF unit upside down.

3 Open he roller holder and replace the roller.

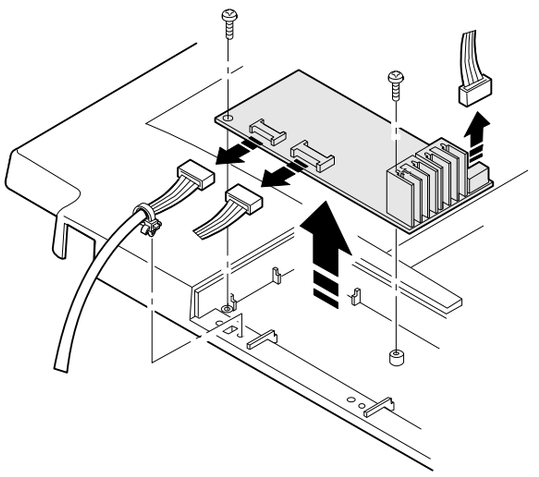


For assembly, reverse the disassembly procedures.

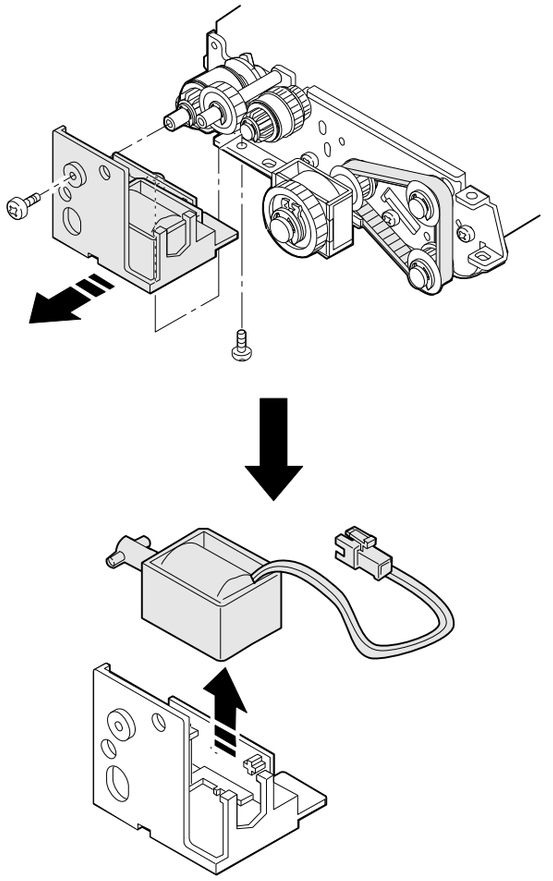
5-4. SPF control PWB replacement

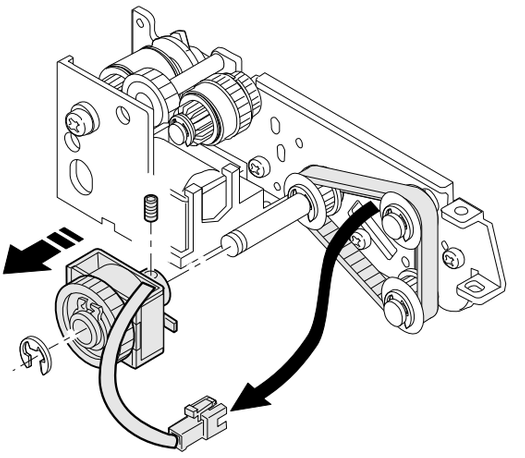
1 Remove the SPF upper cover as shown in "5-1-1 , 2 ."

2 Remove three connectors and two screws from the SPF control PWB and remove the PWB.

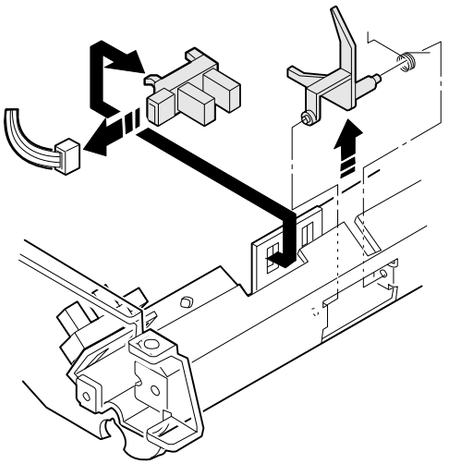


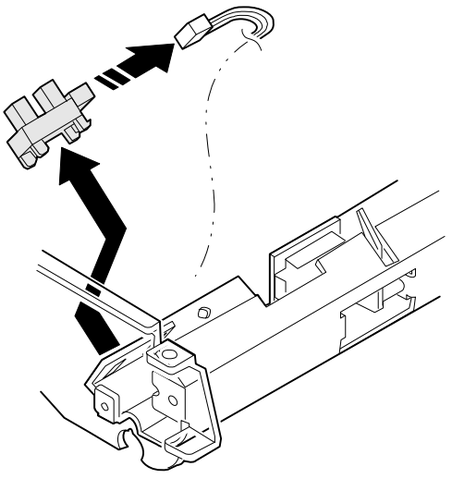
5-5. Clutch/solenoid removal

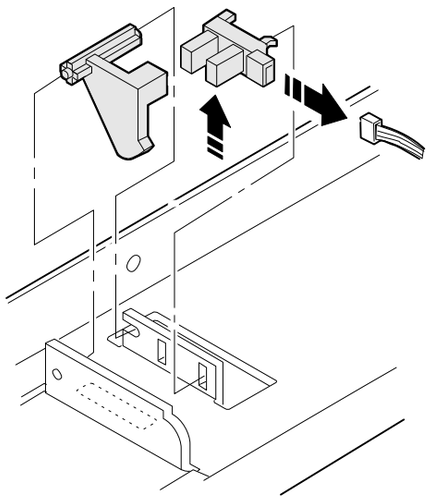




5-6. Sensor removal







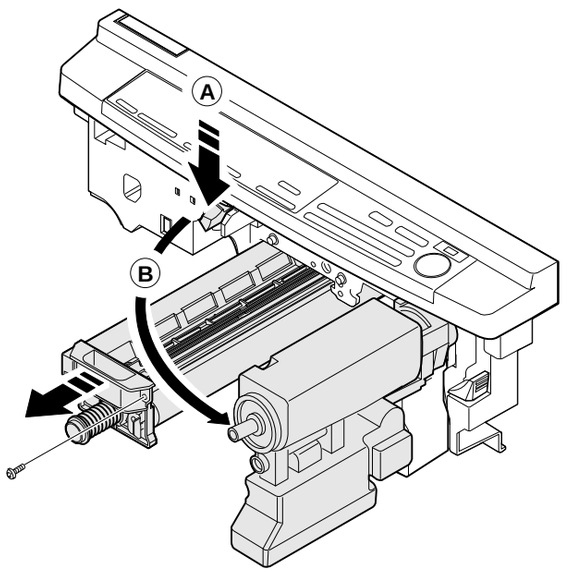
6. Drum section

6-1. Drum unit removal

1 Open the front cover.

2 While pressing down the release lever A , open the toner cartridge slowly. (Arrow B)

3 Remove the screw and remove the drum unit.



7. Developer section

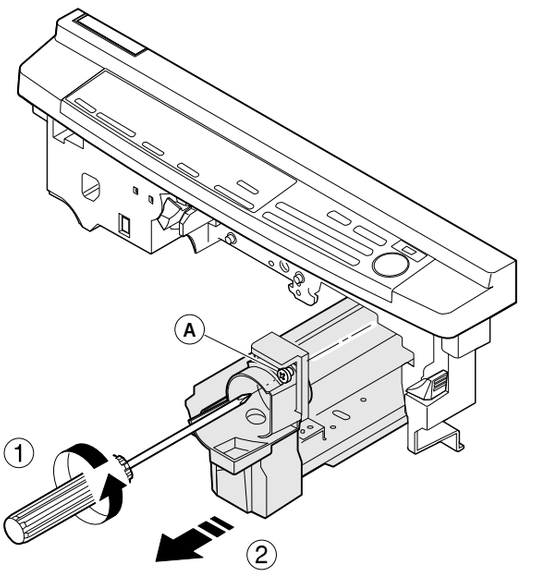
7-1. Developer unit removal

1 Open the front cover.

2 While pressing down the release lever, open the toner cartridge slowly and remove it.

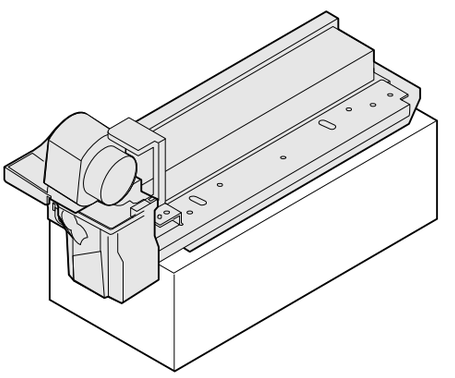
3 Loosen the step screw A .

4 Pull out the developer unit.

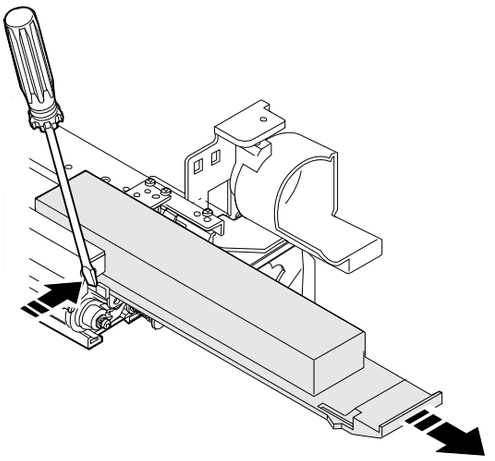


7-2. Developer cartridge removal

1 Place the magnet roller of the developer unit on the box to protect it.

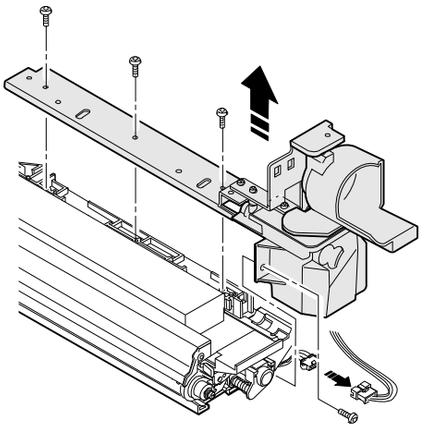


2 As shown in the figure below, open the section which is pressing the cartridge pawl with a screwdriver, and pull out the developer cartridge.

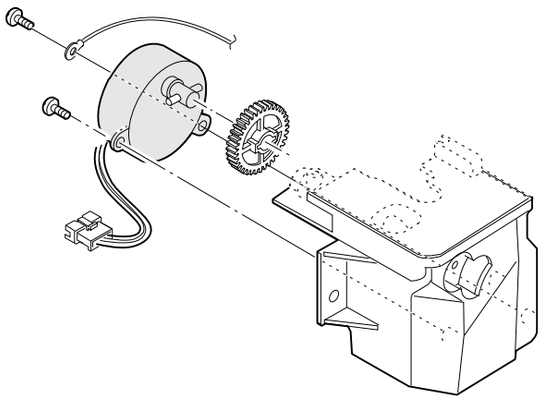


7-3. Toner motor removal

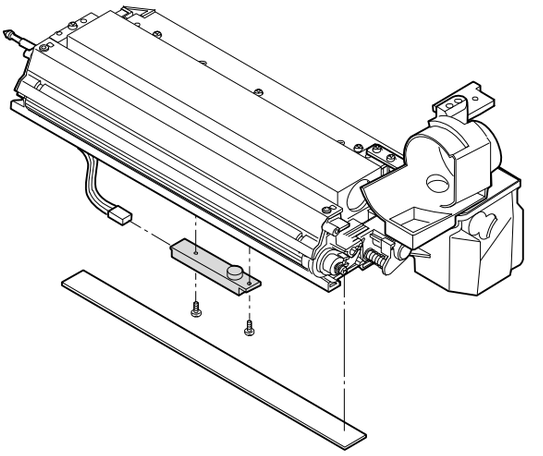
1 Remove four short screws A and one long screw B , and the connector, and separate the toner cartridge section.



2 Remove two screws C and remove the motor.



7-4. Toner density sensor

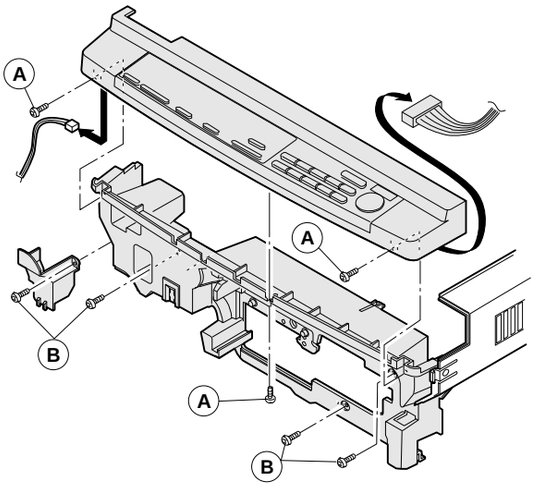


8. Operation panel section/medium cabinet

1 Open the front cabinet.

2 Remove three screws A and two harnesses from the operation panel.

3 Remove the operation panel unit.



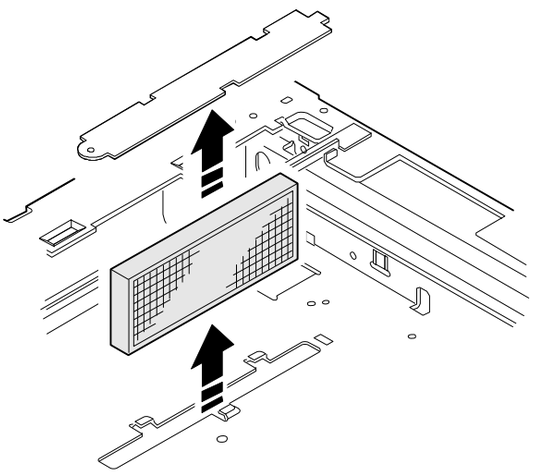
4 When removing the medium cabinet, first remove the process unit and the developer unit then remove four screws B and remove the medium cabinet.

9. Major parts in the frame side

9-1. Ozone filter

1 Remove the document glass.

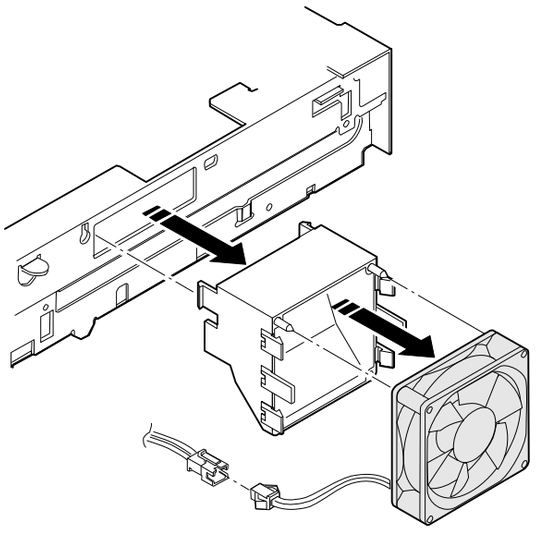
2 Remove the black sheet and remove the ozone filter.

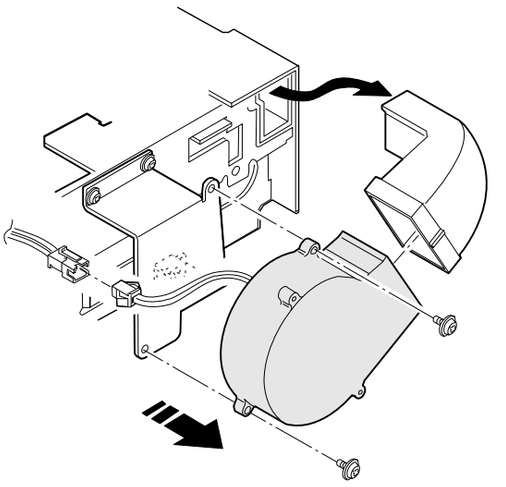


9-2. Optical unit/SPF unit cooling fan removal

1 Remove the rear cabinet.

2 Remove as shown below.

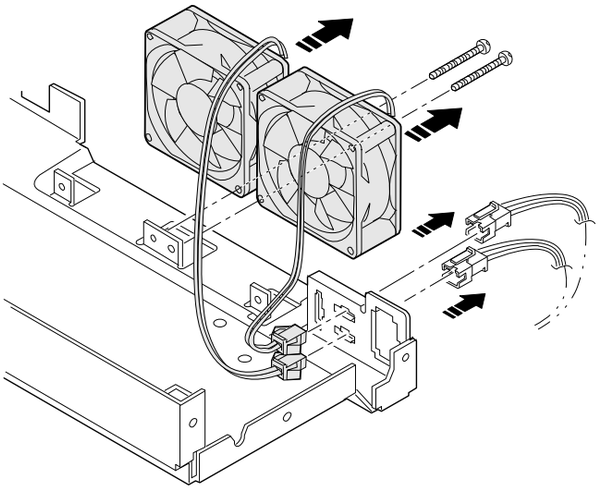




9-3. Ventilation fan motor

1 Remove the optical unit. (For details, refer to "4. Optical unit removal.")

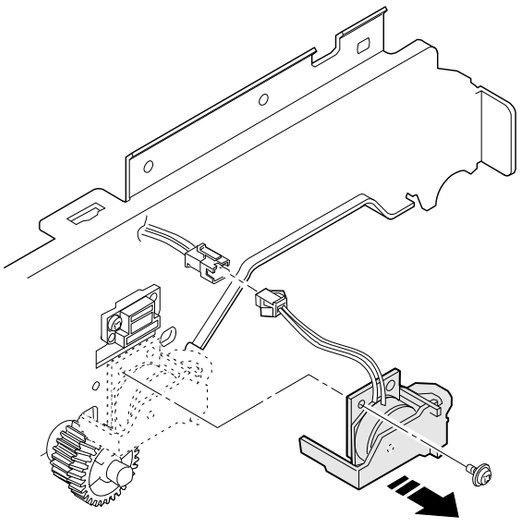
2 As shown in the figure below, remove the ventilation fan motor.



9-4. Transport roller clutch

1 Remove the rear cabinet.

2 Remove the transport clutch as shown in the figure below.

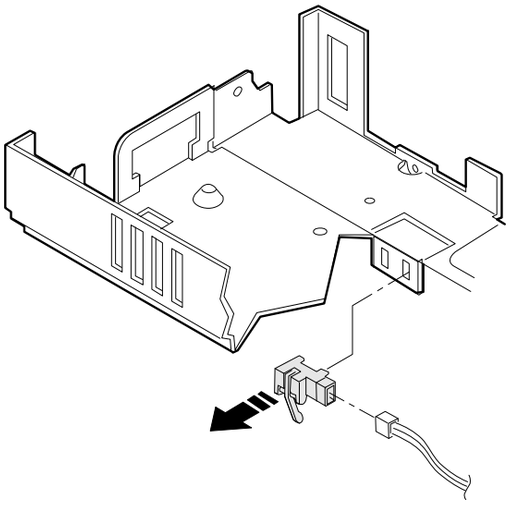


9-5. Paper exit sensor

1 Open the front panel.

2 Move the open/close lever to the right and open the upper unit slowly.

3 Remove the sensor as shown in the figure below.



[7] ADJUSTMENTS

The descriptions of this chapter are divided into the following sections:

1. Developer section

(1) MG roller main pole position adjustment

(2) Adjustment of clearance between DV doctor and MG roller

2. Optical section

(1) Lens unit angle adjustment

(2) Mirror unit angle/position adjustment

(3) Image distortion adjustment

(4) Copy image center position adjustment

(5) Focus adjustment

(6) Copy magnification ratio adjustment

(7) Uniformity adjustment

(8) Image loss/void area adjustment

3. Copy density adjustment

(1) Copy Density adjustment timing

(2) Note for copy density adjustment

(3) Necessary thing for copy density adjustment

(4) Copy density adjustment mode

(5) Copy density adjustment procedure

(6) Copy density adjustment table

4. Others

(1) Transfer charger wire installation

(2) DV bias adjustment

(3) Separation charger output adjustment

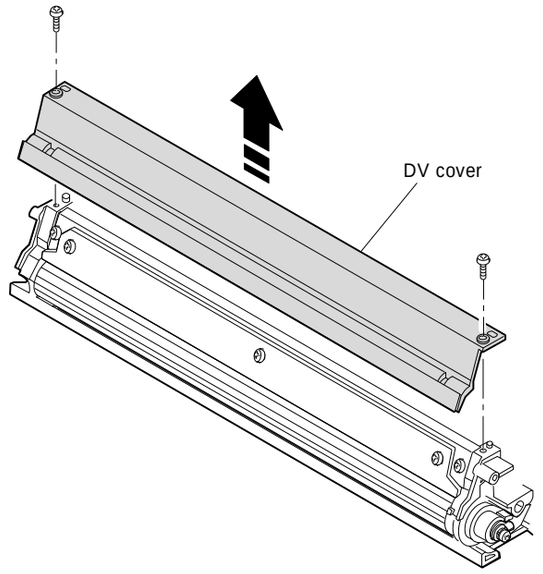
1. Developer section

(1) MG roller main pole position adjustment

If the MG roller main pole position is improper, the following troubles may occur:

- Insufficient copy density
- Toner splash

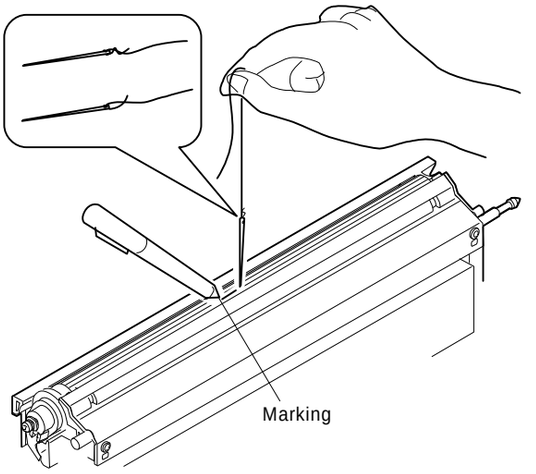
1 Remove the DV unit from the body and remove the DV cover.



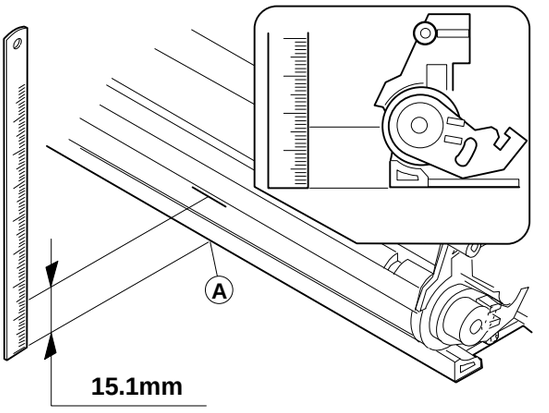
2 Tie a string to a needle as shown in the figure below.

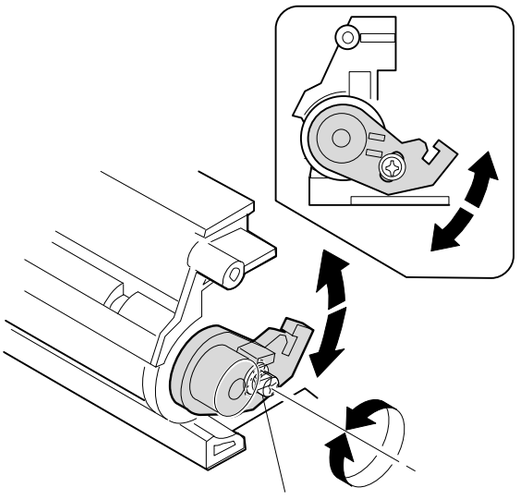
3 Hold the string and move the needle to the MG roller.

4 Mark the point where the needle makes contact with the MG roller.



5 Measure the distance between the marking and the developer unit bottom A and check that the distance is within 15.1mm. If the measured distance is outside the range, loosen the MG adjustment plate fixing screw, and move the adjustment plate in the arrow direction to perform procedures 3 to 5 again.





6 Tighten the MG adjustment plate fixing screw.

(2) Adjustment of clearance between DV doctor and MG roller

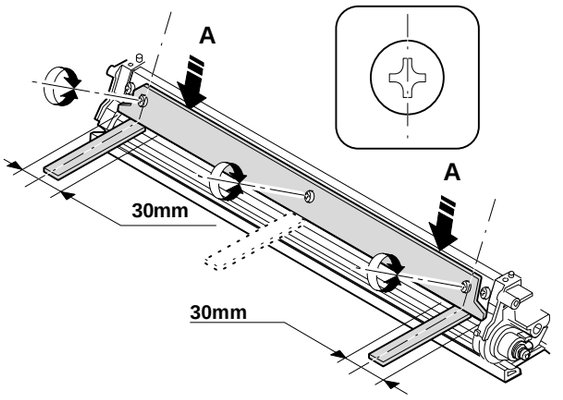
If the clearance between the DV doctor and the MG roller is improper, the following troubles may occur:

- Insufficient copy density
- Copy dirt
- Toner splash

1 Remove the DV cover.

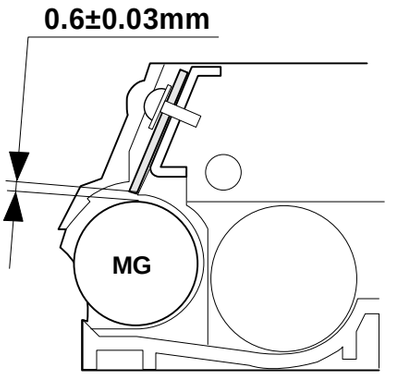
2 Loosen the DV doctor fixing screw.

3 Insert a 0.6mm thickness gauge into the clearance between the MG roller and the DV doctor in the range of 30mm width under the DV doctor fixing screw.



4 Press the DV doctor in the arrow direction and tighten the DV doctor fixing screw.

5 Check that the clearance of the DV doctor is 0.6 ±0.03mm in the range of 30mm width under the DV doctor fixing screw.



Note: When adjusting, be careful not to scratch the DV doctor.

2. Optical section

A. Adjustments list

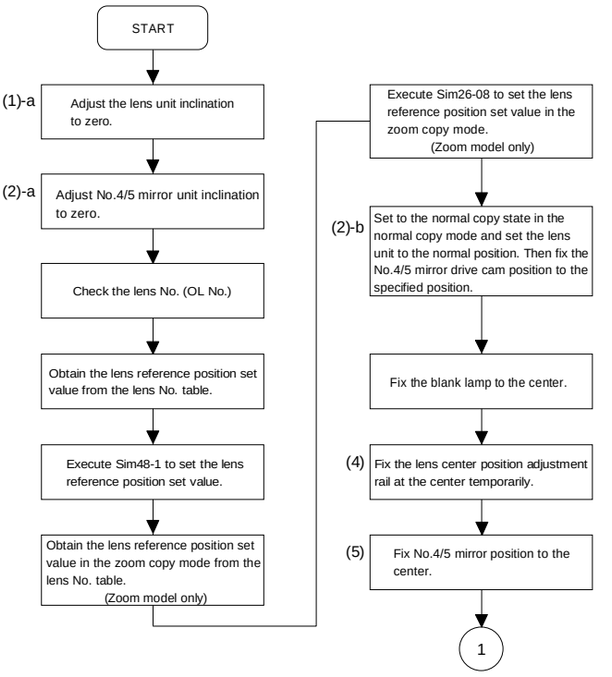
Classification	No.	Adjustment content			Adjustment value/Standard value	Necessary special tool	Ref. page
Parts installation position	(1)	Lens	a	Lens unit right angle adjustment	—	—	7-6
	(2)	Mirror	a	No.4/5 mirror unit right angle adjustment	—	—	7-7
			b	No. 4/5 mirror unit drive cam position adjustment	—	—	7-8
Copy picture quality	(3)	Picture image distortion	a	Horizontal image distortion adjustment	—	—	7-11
			b	Vertical image distortion adjustment	—	—	7-12
	(4)	Copy image center position adjustment			0 ±1.5 mm	—	7-13
	(5)	Focus adjustment (Resolution adjustment)			*	—	7-13
	(6)	Copy magnification ratio adjustment	a	Vertical copy magnification ratio adjustment (normal copy)	100 ±0.8%	—	7-14
			b	Vertical copy magnification ratio adjustment (zoom copy)	100 ±0.9%	—	7-15
			c	Horizontal copy magnification ratio adjustment (zoom copy)	100 ±0.8%	—	7-15
	(7)	Uniformity adjustment			—	—	7-17
	(8)	Image loss, void area adjustment	a	Copy image position adjustment	*	—	7-18
			b	Void area adjustment Lead edge Lead edge void area adjustment (SPF mode) End edge void area adjustment	$0\ ^{+3}_{-0}$ mm	—	7-21

* For details, refer to the Ref. page.

B. Notes

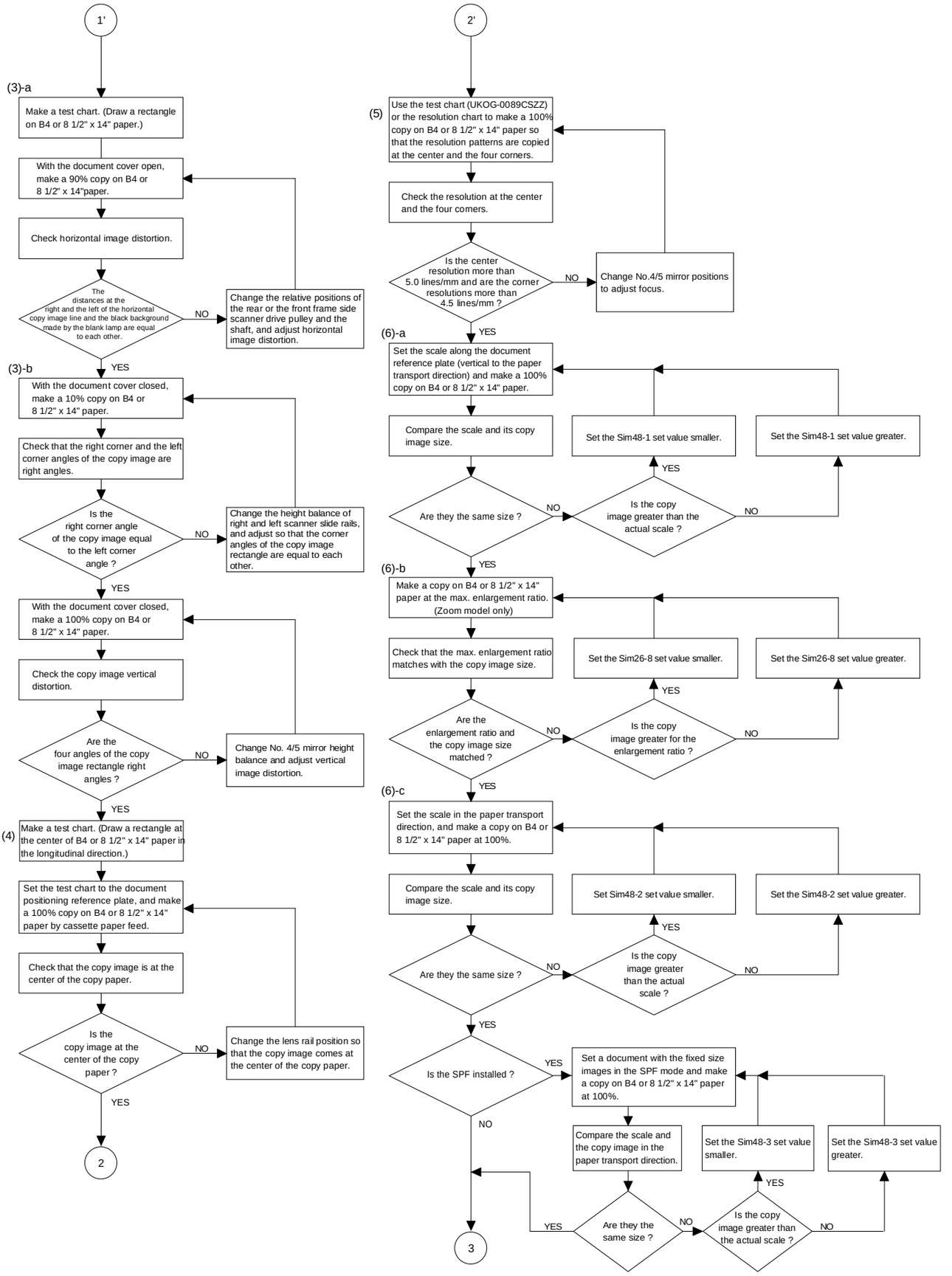
When performing the adjustment, observe the following notes:

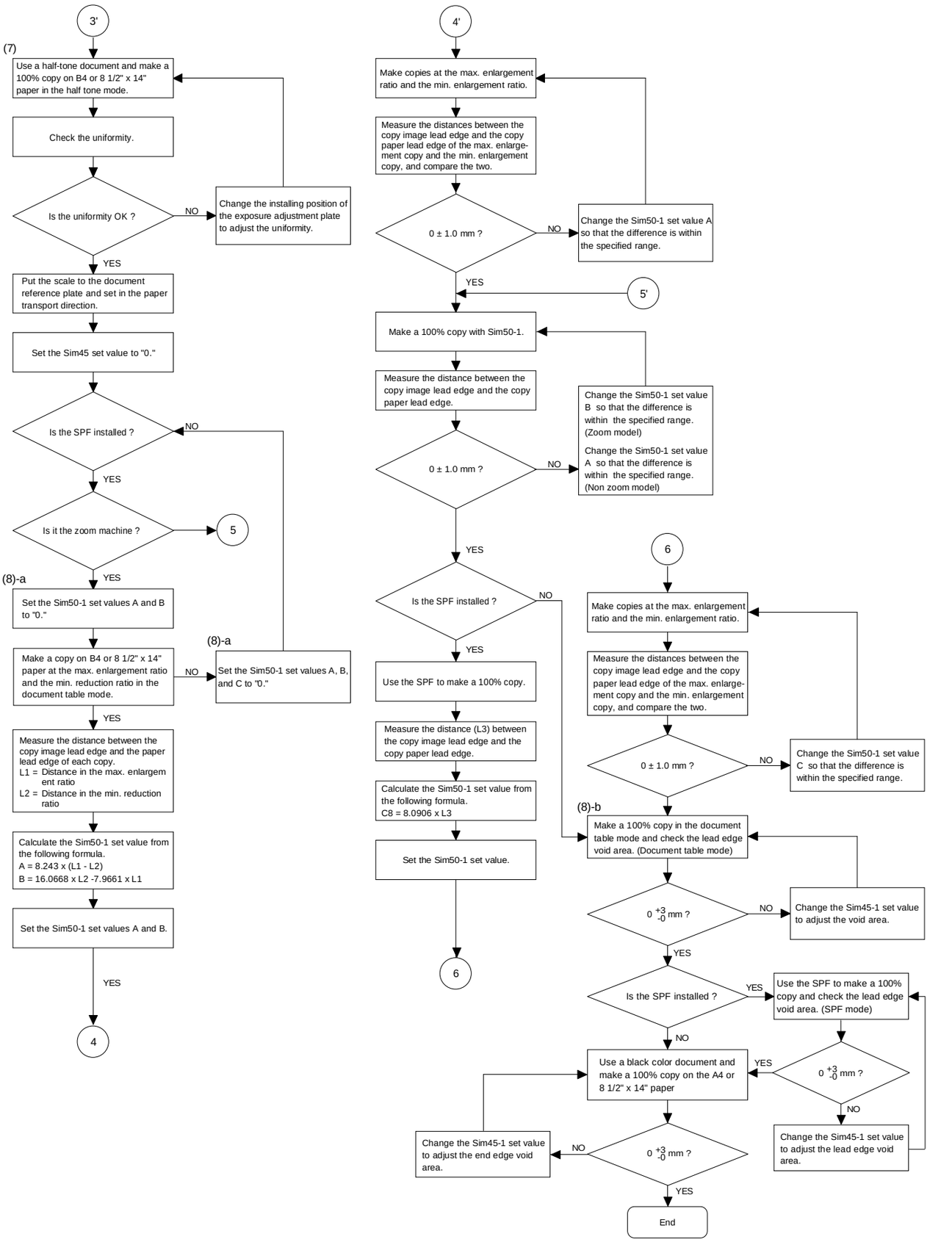
1) Observe the sequence of procedures shown in the flowchart below.
2) Adjustment can be started midway in the flowchart only if all the previous items have been properly adjusted.
3) If the content of an adjustment item in the flowchart is changed, all the following items must be adjusted accordingly.
   Any adjustment item is based on the previous adjustment items and relates to the following adjustment items.
4) "Sim" in the flowchart stands for "Simulation."


START
(1)-a
Adjust the lens unit inclination to zero.
(2)-a
Adjust No.4/5 mirror unit inclination to zero.
Check the lens No. (OL No.)
Obtain the lens reference position set value from the lens No. table.
Execute Sim48-1 to set the lens reference position set value.
Obtain the lens reference position set value in the zoom copy mode from the lens No. table.
(Zoom model only)
Execute Sim26-08 to set the lens reference position set value in the zoom copy mode.
(Zoom model only)
(2)-b
Set to the normal copy state in the normal copy mode and set the lens unit to the normal position. Then fix the No.4/5 mirror drive cam position to the specified position.
Fix the blank lamp to the center.
(4)
Fix the lens center position adjustment rail at the center temporarily.
(5)
Fix No.4/5 mirror position to the center.
1

Standard setting value in the sim48-1 and 26-8 (Reference)

Lens No.	–1	0	1	2	3	4	5	6	7	8	9	10	11	12
sim48	77	75	73	72	70	68	67	65	63	61	60	58	56	55
sim26-8	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Lens No.	13	14	15	16	17	18								
sim48	53	51	49	48	46	44								
sim26-8	14	15	16	17	18	19								


1'
(3)-a
Make a test chart. (Draw a rectangle on B4 or 8 1/2" x 14" paper.)
With the document cover open, make a 90% copy on B4 or 8 1/2" x 14"paper.
Check horizontal image distortion.
The distances at the right and the left of the horizontal copy image line and the black background made by the blank lamp are equal to each other.
NO
Change the relative positions of the rear or the front frame side scanner drive pulley and the shaft, and adjust horizontal image distortion.
YES
(3)-b
With the document cover closed, make a 10% copy on B4 or 8 1/2" x 14" paper.
Check that the right corner and the left corner angles of the copy image are right angles.
Is the right corner angle of the copy image equal to the left corner angle ?
NO
Change the height balance of right and left scanner slide rails, and adjust so that the corner angles of the copy image rectangle are equal to each other.
YES
With the document cover closed, make a 100% copy on B4 or 8 1/2" x 14" paper.
Check the copy image vertical distortion.
Are the four angles of the copy image rectangle right angles ?
NO
Change No. 4/5 mirror height balance and adjust vertical image distortion.
YES
(4)
Make a test chart. (Draw a rectangle at the center of B4 or 8 1/2" x 14" paper in the longitudinal direction.)
Set the test chart to the document positioning reference plate, and make a 100% copy on B4 or 8 1/2" x 14" paper by cassette paper feed.
Check that the copy image is at the center of the copy paper.
Is the copy image at the center of the copy paper ?
NO
Change the lens rail position so that the copy image comes at the center of the copy paper.
YES
2
2'
(5)
Use the test chart (UKOG-0089CSZZ) or the resolution chart to make a 100% copy on B4 or 8 1/2" x 14" paper so that the resolution patterns are copied at the center and the four corners.
Check the resolution at the center and the four corners.
Is the center resolution more than 5.0 lines/mm and are the corner resolutions more than 4.5 lines/mm ?
NO
Change No.4/5 mirror positions to adjust focus.
YES
(6)-a
Set the scale along the document reference plate (vertical to the paper transport direction) and make a 100% copy on B4 or 8 1/2" x 14" paper.
Compare the scale and its copy image size.
Set the Sim48-1 set value smaller.
Set the Sim48-1 set value greater.
YES
Are they the same size ?
NO
Is the copy image greater than the actual scale ?
NO
YES
(6)-b
Make a copy on B4 or 8 1/2" x 14" paper at the max. enlargement ratio. (Zoom model only)
Check that the max. enlargement ratio matches with the copy image size.
Set the Sim26-8 set value smaller.
Set the Sim26-8 set value greater.
YES
Are the enlargement ratio and the copy image size matched ?
NO
Is the copy image greater for the enlargement ratio ?
NO
YES
(6)-c
Set the scale in the paper transport direction, and make a copy on B4 or 8 1/2" x 14" paper at 100%.
Compare the scale and its copy image size.
Set Sim48-2 set value smaller.
Set the Sim48-2 set value greater.
YES
Are they the same size ?
NO
Is the copy image greater than the actual scale ?
NO
YES
Is the SPF installed ?
YES
Set a document with the fixed size images in the SPF mode and make a copy on B4 or 8 1/2" x 14" paper at 100%.
NO
Compare the scale and the copy image in the paper transport direction.
Set the Sim48-3 set value smaller.
Set the Sim48-3 set value greater.
YES
YES
Are they the same size ?
NO
Is the copy image greater than the actual scale ?
NO
3


3'
(7)
Use a half-tone document and make a 100% copy on B4 or 8 1/2" x 14" paper in the half tone mode.
Check the uniformity.
Is the uniformity OK ?
NO
Change the installing position of the exposure adjustment plate to adjust the uniformity.
YES
Put the scale to the document reference plate and set in the paper transport direction.
Set the Sim45 set value to "0."
Is the SPF installed ?
NO
YES
Is it the zoom machine ?
5
YES
(8)-a
Set the Sim50-1 set values A and B to "0."
Make a copy on B4 or 8 1/2" x 14" paper at the max. enlargement ratio and the min. reduction ratio in the document table mode.
NO
(8)-a
Set the Sim50-1 set values A, B, and C to "0."
YES
Measure the distance between the copy image lead edge and the paper lead edge of each copy.
L1 = Distance in the max. enlargement ratio
L2 = Distance in the min. reduction ratio
Calculate the Sim50-1 set value from the following formula.
A = 8.243 x (L1 - L2)
B = 16.0668 x L2 -7.9661 x L1
Set the Sim50-1 set values A and B.
YES
4
4'
Make copies at the max. enlargement ratio and the min. enlargement ratio.
Measure the distances between the copy image lead edge and the copy paper lead edge of the max. enlargement copy and the min. enlargement copy, and compare the two.
0 ± 1.0 mm ?
NO
Change the Sim50-1 set value A so that the difference is within the specified range.
YES
5'
Make a 100% copy with Sim50-1.
Measure the distance between the copy image lead edge and the copy paper lead edge.
Change the Sim50-1 set value B so that the difference is within the specified range. (Zoom model)
Change the Sim50-1 set value A so that the difference is within the specified range. (Non zoom model)
0 ± 1.0 mm ?
NO
YES
Is the SPF installed ?
NO
YES
Use the SPF to make a 100% copy.
Measure the distance (L3) between the copy image lead edge and the copy paper lead edge.
Calculate the Sim50-1 set value from the following formula.
C8 = 8.0906 x L3
Set the Sim50-1 set value.
6
6
Make copies at the max. enlargement ratio and the min. enlargement ratio.
Measure the distances between the copy image lead edge and the copy paper lead edge of the max. enlargement copy and the min. enlargement copy, and compare the two.
0 ± 1.0 mm ?
NO
Change the Sim50-1 set value C so that the difference is within the specified range.
(8)-b
Make a 100% copy in the document table mode and check the lead edge void area. (Document table mode)
0 +3 -0 mm ?
NO
Change the Sim45-1 set value to adjust the void area.
YES
Is the SPF installed ?
YES
Use the SPF to make a 100% copy and check the lead edge void area. (SPF mode)
NO
Use a black color document and make a 100% copy on the A4 or 8 1/2" x 14" paper
YES
0 +3 -0 mm ?
NO
Change the Sim45-1 set value to adjust the lead edge void area.
Change the Sim45-1 set value to adjust the end edge void area.
NO
0 +3 -0 mm ?
YES
End

C. Adjustment contents

(1) Lens

a. Lens unit right angle adjustment

I. Summary

By setting the optical axis of the copier body and that of the lens in parallel with each other, copy image distortion due to the lens can be reduced.

The horizontal angle of the lens unit slide shaft is changed by changing the position of the lens unit slide shaft fixing plate.

This adjustment is performed not by checking a copy image, but by visual measurement with the mark on the optical unit base as the reference.

The copy image distortion must be adjusted not only in this adjustment but also in the mirror parallelism adjustment.

II. Purpose

The purpose of this adjustment is to reduce copy image distortion due to the lens by setting the optical axis of the copier body and the optical axis of the lens in parallel with each other.

III. Note

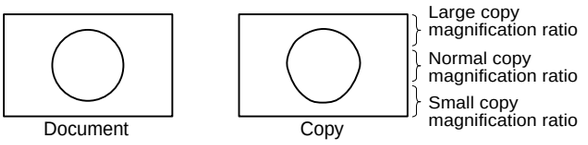
The copy image distortion adjustment is completed by making a copy and adjusting parallelism of the mirror.

For that purpose, this adjustment must have been properly performed.

IV. Cases when the adjustment is required

1) When the lens or the lens unit is disassembled or its part is replaced.

2) When the copy image is distorted as follows (because of different copy magnification ratios in different sections):

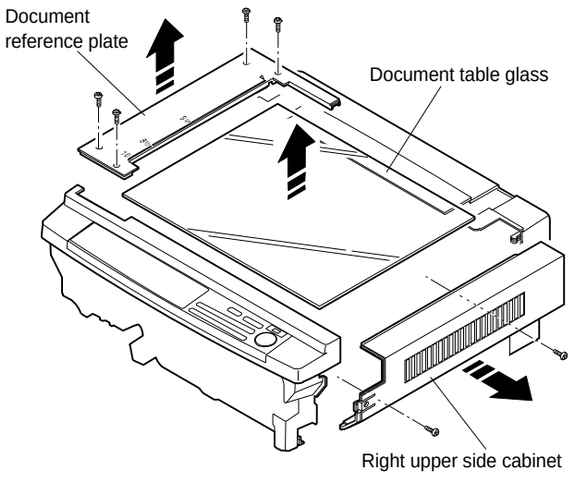


V. Necessary tool

* Screwdriver (+)

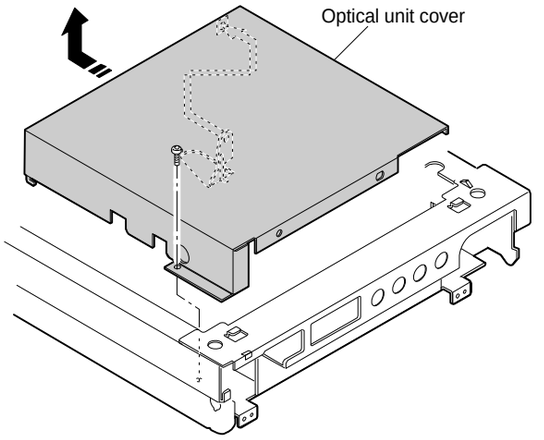
VI. Adjustment procedure

1) Remove the right upper side cabinet and the document reference plate.

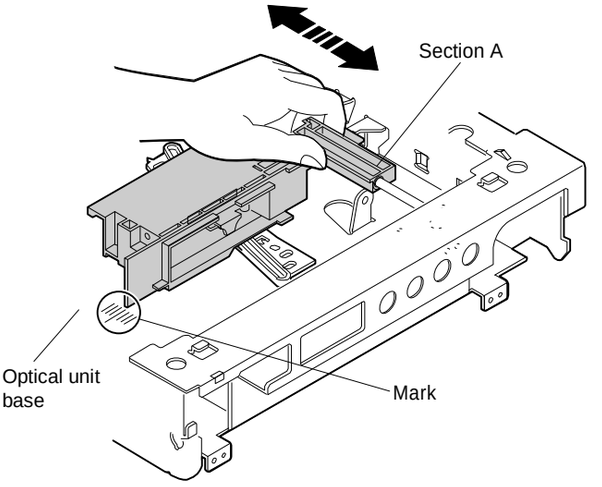


2) Remove the document glass.

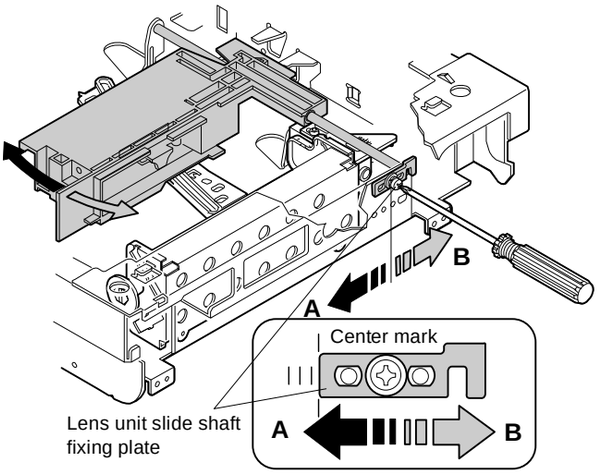
3) Remove the optical unit cover.



4) Hold section A of the lens unit slide, and move the lens unit side section to the mark on the optical unit base.



5) Loosen the lens unit slide shaft fixing screw.



6) Fix the lens unit slide shaft fixing plate in the center mark position.

VII. Troubles caused by improper adjustment

(2) Mirror

There are following adjustments of parts installation positions related to the mirror.

* No. 4/5 mirror unit right angle adjustment
* No. 4/5 mirror unit drive cam position adjustment

a. No. 4/5 mirror unit right angle adjustment

I. Summary

Copy image distortion caused by No. 4/5 mirror unit van be reduced by setting the optical axis of the copier and No. 4/5 mirror unit.

The horizontal angle of the lens unit slide shaft is adjusted by changing the position of No. 4/5 mirror nit slide shaft fixing plate.

This adjustment is performed not by checking a copy image but by visual measurement with the optical unit base plate as the reference.

Copy image distortion must be adjusted ont only in this adjustment but also in the No. 1/2 scanner unit parallelism adjustment.

II. Purpose

The purpose of this adjustment is to eliminate copy image distortion by setting the optical axis of the copier and that of the No. 4/5 mirror unit in parallel with each other.

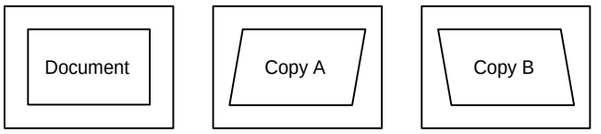
III. Note

The copy image distortion adjustment is completed by making a copy and adjusting the parallelism of No. 1 and No. 2 scanner units.

For that purpose, this adjustment must have been properly performed.

IV. Cases when the adjustment is required

1) When No. 4/5 mirror unit is disassembled or its part is replaced.
2) When the copy image is distorted as follows:

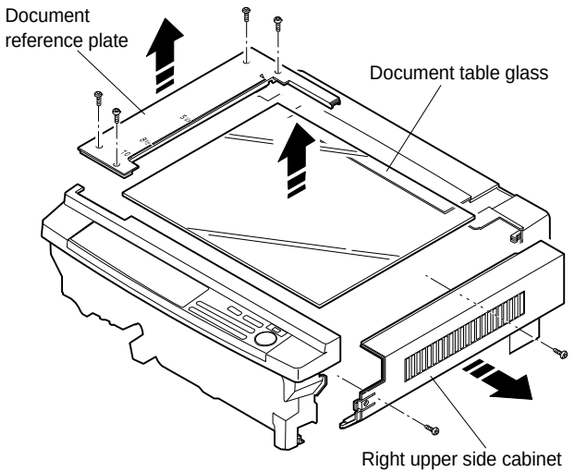


V. Necessary tools:

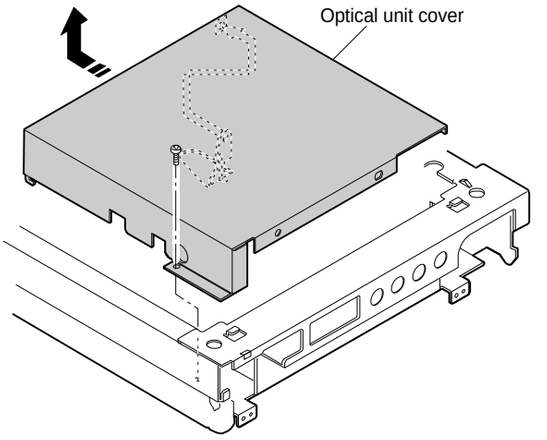
* Screwdriver (+)
* Scale

VI. Adjustment procedure

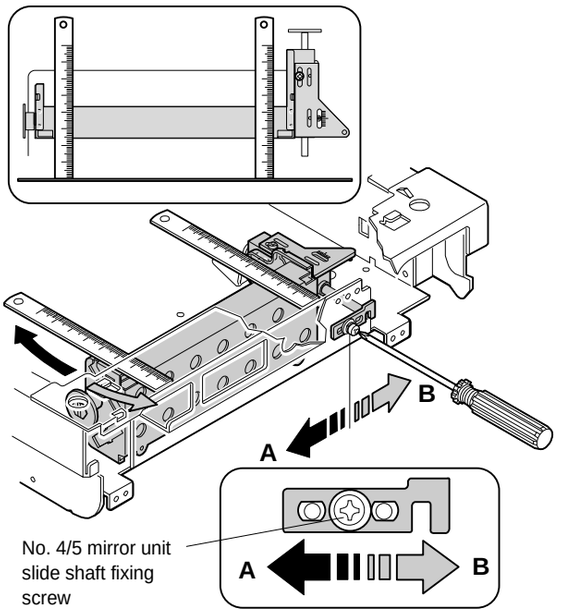
1) Remove the right upper side cabinet and the document reference plate.



2) Remove the document glass.



3) Loosen the fixing screw of the No. 4/5 mirror unit slide shaft fixing plate.



4) Move the No. 4/5 mirror unit slide shaft fixing plate in directions A and B so that the No. 4/5 mirror unit side is in parallel with the optical unit frame side plate, and fix it.
Use a scale to check the parallelism.

VII. Trouble caused by improper adjustment

b. No. 4/5 mirror unit drive cam position adjustment (Zoom model only)

I. Summary

The copy magnification ratio and focus are properly adjusted by matching the lens unit movement and the No. 4/5 mirror movement.

This adjustment is performed by changing the relative positions of the lens unit drive gear and the No. 4/5 mirror unit drive cam.

II. Purpose

The purpose of this adjustment is to adjust the relative positions of the lens unit drive gear and the No. 4/5 mirror unit drive cam and to adjust the copy magnification ratio and the focus.

III. Note

IV. Cases when the adjustment is required

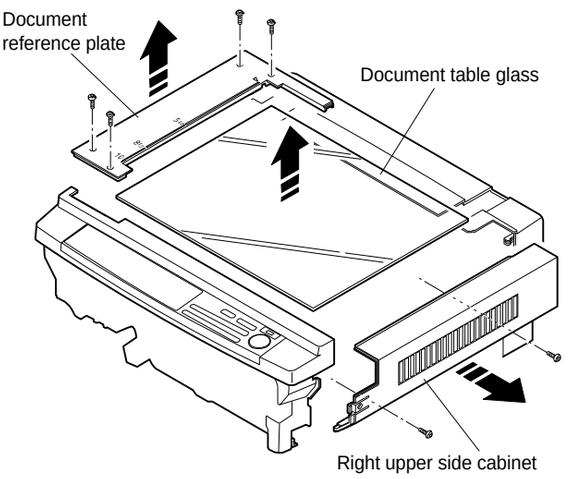
1) When the lens and the No. 4/5 mirror drive section are disassembled or its part is replaced.
2) When the focus is improper though the copy magnification ratio is proper, or vice versa.

V. Necessary tools

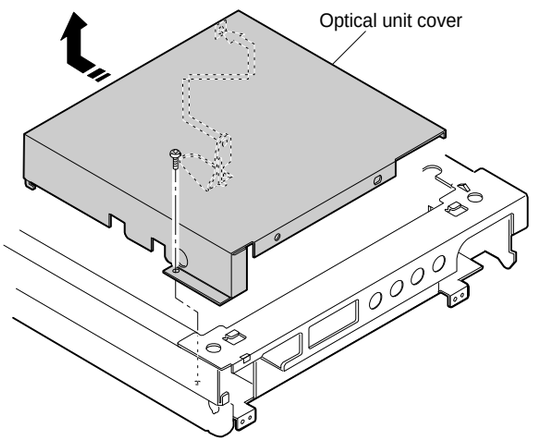
* Screwdriver (+)
* M4 x 20 screw

VI. Adjustment procedure

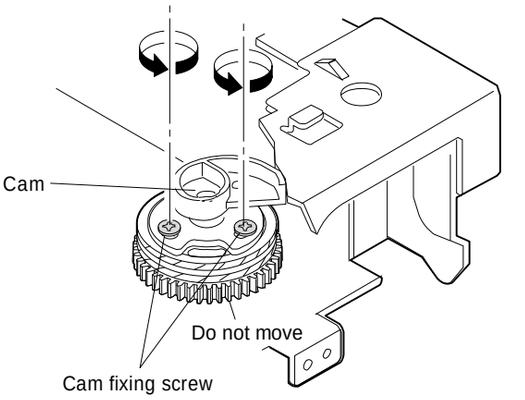
1) Set the copy magnification ratio to 100%, and set the lens unit to the position for 100% copy magnification ratio.
2) Remove the right side cabinet and the document reference plate.



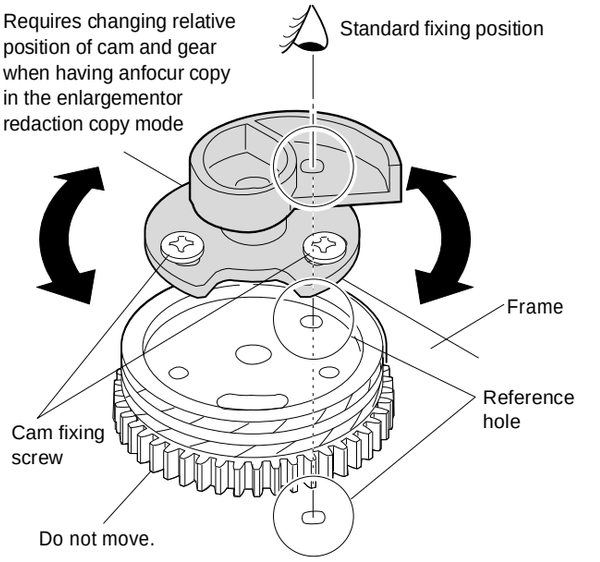
3) Remove the document glass.
4) Remove the optical unit cover.



5) Loosen the No. 4/5 mirror unit drive cam fixing screw without moving the lens unit drive gear.



6) Turn the No. 4/5 mirror unit drive cam without moving the lens unit drive gear so that the cam positioning hole is fit with the reference hole in the optical unit frame.


Requires changing relative position of cam and gear when having anfocur copy in the enlargementor redaction copy mode
Standard fixing position
Frame
Reference hole
Cam fixing screw
Do not move.

7) Pass the M4 x 20 screw through the No. 4/5 mirror unit drive cam positioning hole and fix the screw to the frame without turning the cam.
8) Tighten the cam fixing screw to fix the No. 4/5 mirror unit drive cam to the lens unit drive gear without moving the lens unit drive gear.
9) Remove the screw which was fixed to the frame in procedure 7).

VII. Troubles caused by improper adjustment

(3) Image distortion adjustment

There are following two types of image distortion.

* Horizontal image distortion
* Vertical image distortion

Image distortion is generated mainly by insufficient parallelism of the mirror and misalignment of the lens optical axis.
In this model, image distortion is adjusted by adjusting parallelism of each mirror.

a. Horizontal image distortion adjustment

I. Summary

This adjustment is to adjust horizontal image distortion by setting the horizontal optical axis of the copier and the horizontal optical axis of each mirror in parallel with each other. The relative positions of the front frame and the scanner unit drive pulley of the frame are changed to perform the above adjustment.

Install the No. 1 and No. 2 scanner units to the specified positions, adjust the mechanical horizontal parallelism, and perform the final adjustment while making copies.

II. Purpose

The purpose of this adjustment is to reduce horizontal image distortion by setting the horizontal optical axis of the copier and the No. 1 and No. 2 scanner unit horizontal optical axis in parallel with each other.

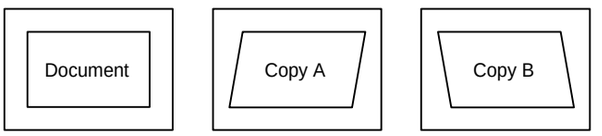
III. Note

Before starting this adjustment, the following items must have been completed. If not, this adjustment cannot reduce image distortion.

* The lens unit right angle adjustment must have been completed.
* The No. 4/5 mirror unit right angle adjustment must have been completed.

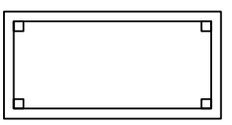
IV. Cases when the adjustment is required

1) When the No. 1 and No. 2 scanner units are disassembled or their part is replaced.
2) When the scanner unit drive section is disassembled or its part is replaced.
3) When the copy image is distorted as shown below:



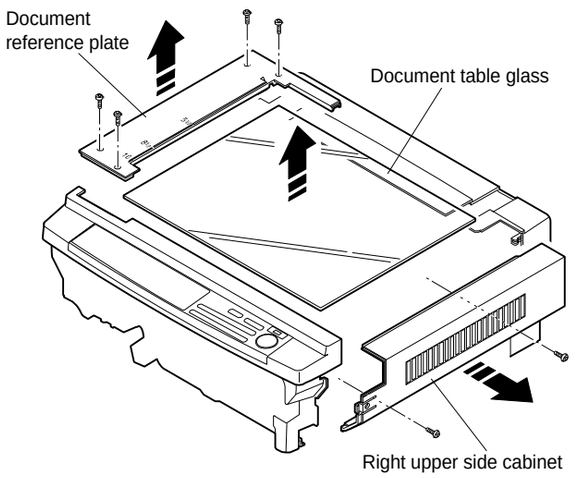
V. Necessary tools

* Screwdriver (+)
* Hex wrench
* Scale
* Test chart for distortion adjustment (Make a chart shown below by yourself.)
  Draw a rectangle on a paper (B4 or 8 1/2" x 14") as shown below.
  Be sure to make four right angles.

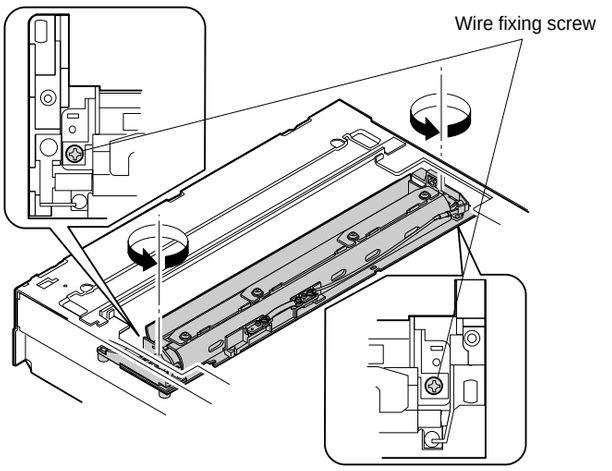


VI. Adjustment procedure

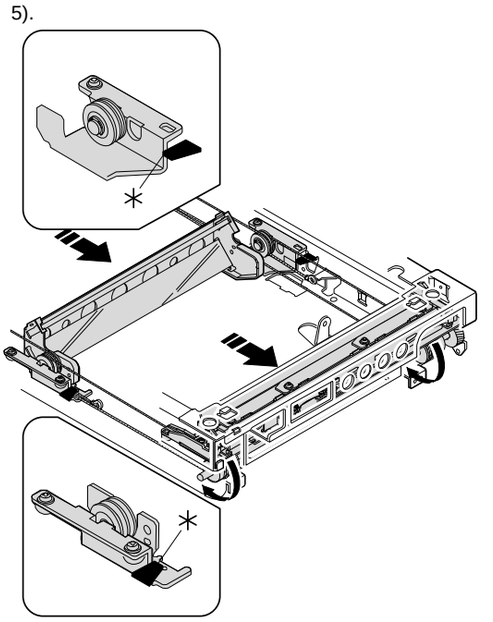
1) Remove the right upper side cabinet and the document reference plate.



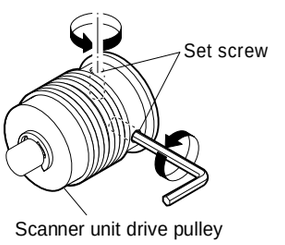
2) Remove the document glass.
3) Loosen the fixing screw of the No. 1 scanner unit wire.



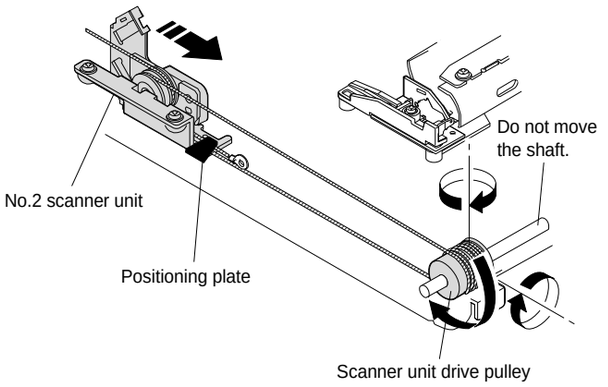
4) Manually turn the scanner unit drive gear to bring No. 2 scanner unit into contact with No. 2 scanner unit positioning plate. When No.2 scanner unit makes contact with No.2 scanner unit positioning plate in the rear frame side simultaneously, the mechanical parallelism of No.2 scanner unit is proper.
   If one side of No.2 scanner unit makes contact with No.2 scanner unit positioning plate and the other side does not, the parallelism is improper.
   If the parallelism is improper, perform the procedure of step 5).



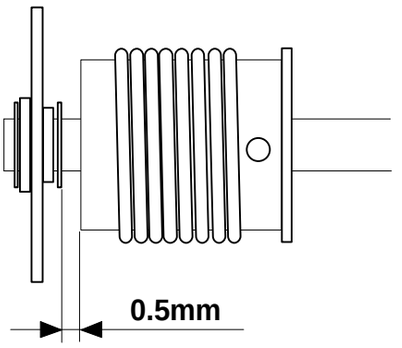
5) Loosen the scanner unit drive pulley setscrew in the side where No.2 scanner unit does not make contact with No.2 scanner unit positioning plate.



6) Without moving the scanner unit drive pulley shaft, manually turn the scanner nit drive pulley in the same side of the loosened setscrew. When it makes contact with No.2 scanner unit positioning plate, tighten and fix the setscrew.

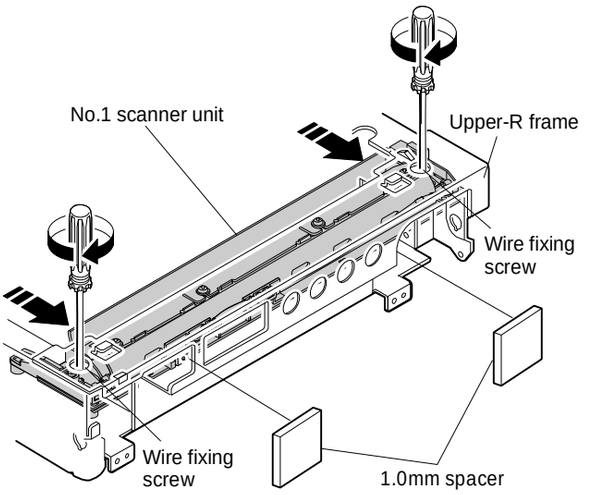


(Note)
Allow a clearance of about 0.5mm between the scanner unit drive pulley and the positioning E-ring.

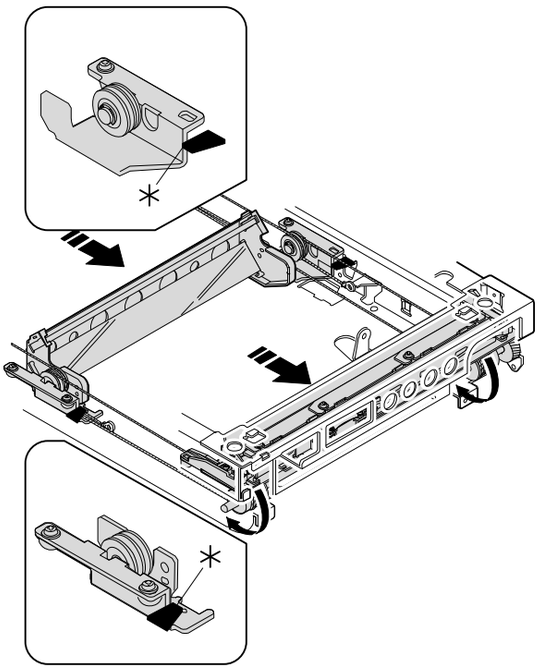


7) Manually turn the scanner unit drive gear to bring No.2 scanner unit into contact with the positioning plate, and perform the procedure of step 4).
Repeat procedures of steps 4) to 7) until the parallelism of No.2 scanner unit is properly set.

8) With No.2 scanner unit being in contact with No.2 scanner unit positioning plate, and insert the 1.0 mm spacer between No.1 scanner unit and upper-R frame, bring No.1 scanner unit into contact with upper-R frame, and fix it to the scanner unit drive wire.

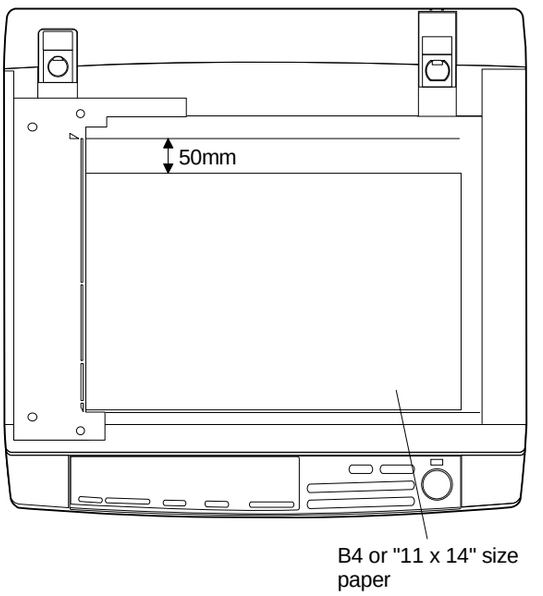


Procedures 1) to 8) are for adjustment of mechanical horizontal parallelism. No.1 scanner unit and No.2 scanner unit are fixed to the specified positions and the mechanical horizontal parallelism of No.2 scanner unit is adjusted.



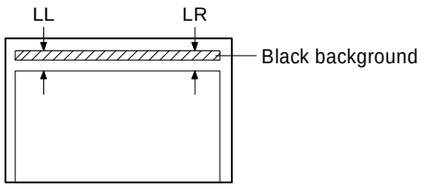
Then the optical horizontal parallelism must be adjusted in the following procedures.

9) Set the image distortion check chart on the document table, and make a reduction copy (90%) on an B4 or 14" x 8 1/2" paper with the document cover open.

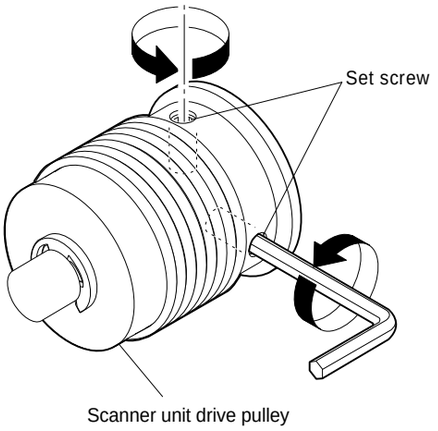


10) Check the horizontal image distortion.
If LL = LR, there is no horizontal distortion.

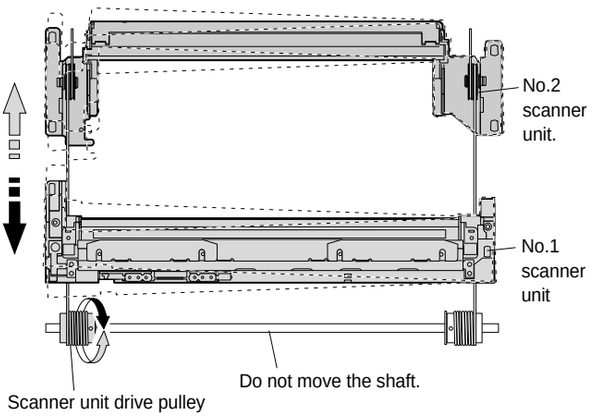
LL and LR = Distance between the copy horizontal line and the outer edge of the black background



11) If LL is not equal to LR, perform the following procedure.
Loosen the setscrew of the scanner unit drive pulley in the front or the rear frame.



12) Without moving the scanner unit drive pulley shaft, manually turn the scanner unit drive pulley whose setscrew was loosened, and adjust the parallelism of No.1 and No.2 scanner units.



13) Tighten the set screw of the scanner unit drive pulley.

14) Check the image distortion in the same manner as step 10).
Repeat procedures 11) to 14) until horizontal image distortion is eliminated.

VII. Troubles caused by improper adjustment

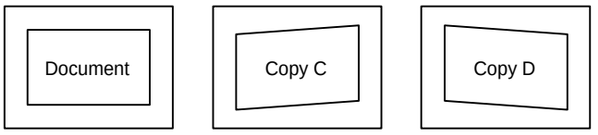
b. Vertical image distortion adjustment

I. Summary
This adjustment is to adjust parallelism of the vertical optical axis of the copier and that of each mirror to eliminate vertical image distortion.
For adjusting vertical image distortion, the overall adjustment and the right-left balance adjustment must be performed independently.
The overall adjustment is performed by changing the height of No.4/5 mirror unit in the front frame side. The right-left balance adjustment is performed by changing the right-left balance of No.2 scanner unit rail.
The right-left balance adjustment must be performed in advance to the overall adjustment.

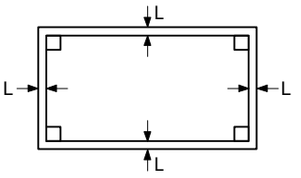
II. Purpose
The purpose of this adjustment is to set parallelism of the vertical optical axis of the copier and that of No.4/5 mirror unit and No.2 mirror unit to eliminate vertical image distortion.

III. Note
Before performing this adjustment, the following adjustments must have been completed.
If not, this adjustment cannot be performed properly.
* The lens unit right angle adjustment
* No.4/5 mirror unit right angle adjustment
* Horizontal image distortion adjustment

IV. Cases when the adjustment is required
1) When No.4/5 mirror unit is disassembled or its part is replaced.
2) When the scanner unit drive section is disassembled or its part is replaced.
3) When the copy image is distorted as follows:



V. Necessary tools
* Screwdriver (+)
* Screwdriver (–)
* Scale
* Test chart for distortion adjustment (Make by yourself.)
Draw a rectangle on A4 or 8 1/2" x 11" paper as shown below:
Be sure to make four right angles.

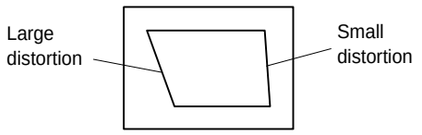


L = 10mm

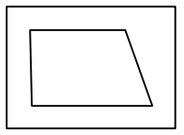
VI. Adjustment procedure

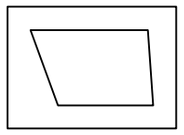
1) Set the test chart for image distortion adjustment on the document glass, and make a normal copy on a paper of A4 or 8 1/2" x 11".

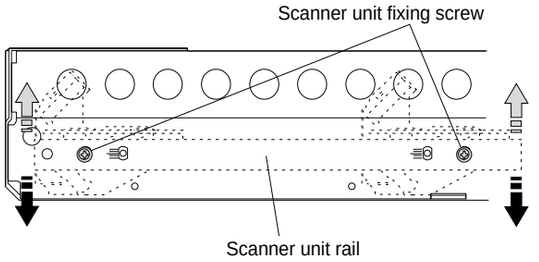
2) Check image distortion in the right and the left sides.
If the both vertical lines are in parallel with each other, the right-left distortion balance is proper. (However, there may be some distortion.)
If all the four angles are right angles, there in no distortion and the following procedures are not required.



3) If the right-left distortion balance is improper, loosen the fixing screw of No.2 scanner unit rail to change and adjust the right-left balance of No.2 scanner unit rail.
(Note)
This procedure is to have the balance between the right image distortion and the left image distortion, which does not mean to eliminate the image distortion. Change the height of No.2 scanner unit rail in the greater distortion side.
If the distortion in the lead edge side (when viewed in the paper transport direction) is greater, change the height of the left rail of No.2 scanner unit.
If the distortion in the rear edge side (when viewed in the paper transport direction) is greater, change the height of the right rail of No.2 scanner unit.

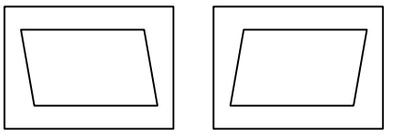

Change the right side height of the rail.

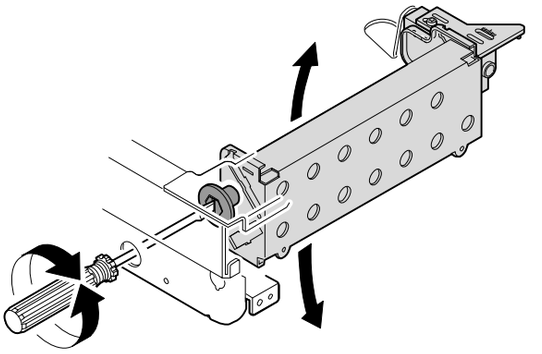

Change the left side height of the rail.



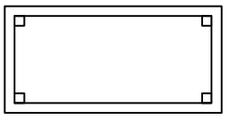
Repeat procedures 2) and 3) until the right-left balance of image distortion is proper.

4) Change the height of the roller in No.4/5 mirror unit front frame side to adjust the vertical image distortion.
If the copy image is tilting as shown in sample (X) below, lower No.4/5 mirror unit. If it is tilting as shown in sample (Y) below, lift No.4/5 mirror unit.





5) Make a copy to check the vertical image distortion.
If the four angles are right angles, the adjustment is completed.



Repeat procedures 4) and 5) until the vertical image distortion is eliminated.

(Note) If a vertical image distortion is not eliminated with procedure 4), change the overall height of No.2 scanner unit rail. Then repeat procedures 1) to 5).

VII. Troubles caused by improper adjustment

(4) Copy image center position adjustment

I. Summary
The optical axis is changed by changing the lens rail position to optically align the document table and the vertical position of the copy image on the copy paper.
When the lens rail position is changed, the lens position in the front and the rear frame direction is changed to change the optical axis.
As a result, the document table is optically aligned with the copy image on the copy paper.

II. Purpose
The purpose of this adjustment is to set the copy image center at the vertical center of the copy paper.

III. Note

Before performing this adjustment, the following adjustment must have been completed. If not, this adjustment cannot be performed properly.

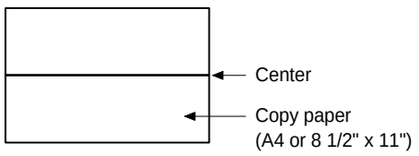
* Lens unit right angle adjustment
* No.4/5 mirror unit right angle adjustment
* Image distortion adjustment

IV. Cases when the adjustment is required

1) When the lens unit is disassembled or its part is replaced.
2) When the lens rail is disassembled or its part is replaced.
3) When the copy image is shifted from the vertical center of the paper.

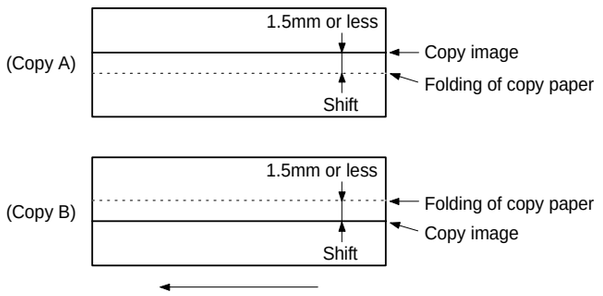
V. Necessary tool

* Screwdriver (+)
* Scale
* Test chart for center position adjustment (Make a chart shown below by yourself.)
  Draw a line in the paper transport direction at the center of A4 or 8 1/2" x 11" paper.

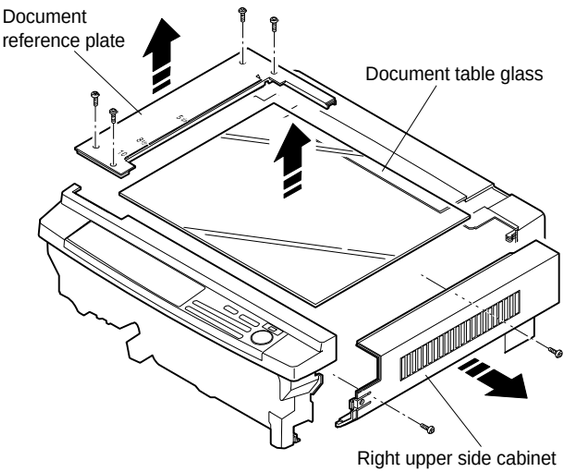


VI. Adjustment procedure

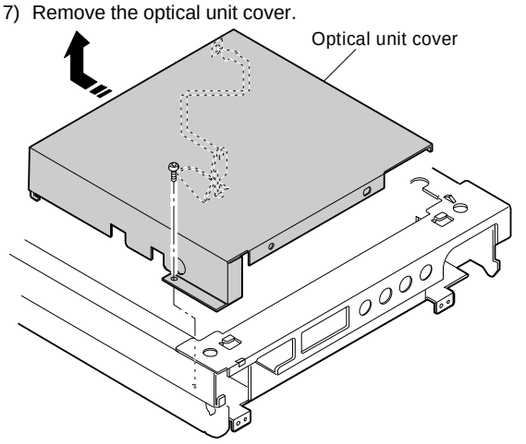
1) Set the test chart for center position adjustment at the document reference position.
2) Make a normal copy (100%) on A4 or 8 1/2" x 11" paper.
3) Check that the image of the line is at the center of the paper. (Standard: 0±1.5mm)



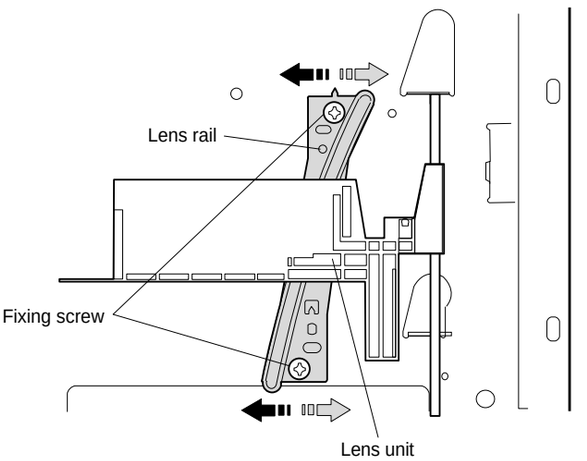
4) If the image of the line is not at the center of the paper, perform the following procedure.
5) Remove the right side cabinet and the document reference plate.



6) Remove the document glass.
7) Remove the optical unit cover.



8) Loosen the lens rail fixing screw, and slide the lens rail back and forth.



9) Make a copy and check that the image line is at the center of the paper. If not, repeat the procedures 1) to 9) until the image line comes at the center of the paper.

VII. Troubles caused by improper adjustment

(5) Focus adjustment (Resolution adjustment)

I. Summary
The distance between the document and the photoconductor drum is changed by changing No.4/5 mirror unit drive lever position to adjust the focus.

II. Purpose
The purpose of this adjustment is to correct the lens variations and the optical section dimensional variations to have good copy images with a proper focus.

III. Note
Before performing this adjustment, the following adjustment must have been completed. If not, this adjustment cannot be performed properly.

* Image distortion adjustment

IV. Cases when the adjustment is required

1) When the lens or the mirror unit is disassembled or any one of their parts is replaced.
2) When the scanner unit drive section is disassembled or its part is replaced.
3) When a cop image of improper focus is obtained.

V. Necessary tools

* Screwdriver (+)
* Test chart (One with the resolution adjustment chart)

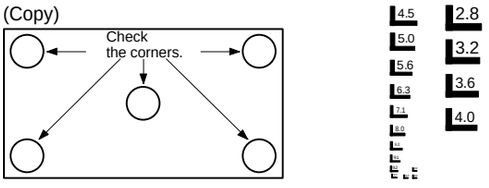
VI. Adjustment procedures

1) Set the test chart on the document table.
2) Make a normal copy (100%) on A4 or 8 1/2" x 11" paper.
3) Check that resolutions at the copy paper center and the four angles are as shown in the table below:

(Standard) (Unit: lines/mm)

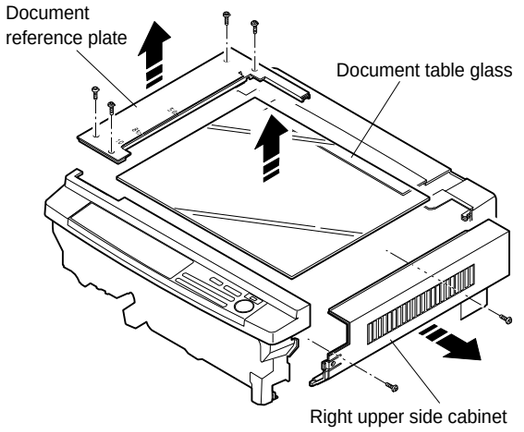
	Copy center	Corner
Normal (100%)	5.0	4.5
Enlargement	5.0	4.5
Reduction	4.5	3.6

(Copy)

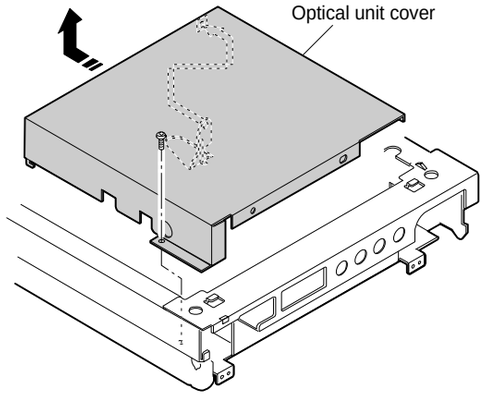


If any resolution is out of the above specifications, perform the following procedures.

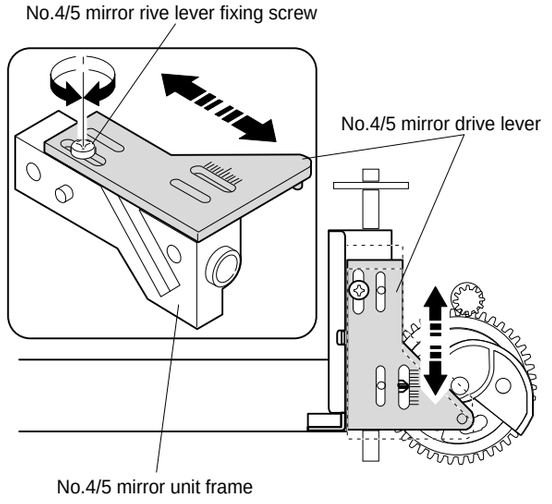
4) Remove the right cabinet and the document reference plate.



5) Remove the document glass.
6) Remove the optical unit cover.



7) Loosen the fixing screw of No.4/5 mirror unit drive lever to change the position of No.4/5 mirror unit drive lever or No.4/5 mirror unit.
In this case, do not shake No.4/5 mirror unit, just change its position.



8) Make a copy and check that the resolutions are in the specified range.
If any resolution is out of the specified range, repeat procedures 1) to 8).

VII. Troubles caused by improper adjustment

(6) Copy magnification ratio adjustment

The copy magnification ratio adjustment must be performed in the vertical direction and in the horizontal direction.
In addition, the horizontal copy magnification ratio adjustment must be performed both in the document table mode and in the SPF mode.
Firstly perform the vertical copy magnification ratio adjustment, then perform the horizontal copy magnification ratio adjustment.

a. Vertical copy magnification ratio adjustment (Normal copy)

I. Summary

The vertical copy magnification ratio adjustment must be performed in the normal (100%) copy mode and in the zoom copy mode.
In the normal (100%) copy mode, the lens home position is changed voluntarily with simulations 48-1 to adjust the vertical copy magnification ratio.
In the zoom copy mode, the lens shift ratio is changed with simulations 48-1 according to the lens home position set with simulations 48-1 to adjust the zoom copy magnification ratio.
The vertical copy magnification ratio adjusted in this procedure is used for the horizontal copy magnification ratio adjustment.

II. Purpose

The purpose of this adjustment is to fit the displayed copy magnification ratio with the actual copy image size.

III. Note

Before performing this adjustment, the following adjustments must have been completed. If not, this adjustment cannot be performed properly.

* Image distortion adjustment
* Focus adjustment

Firstly adjust the vertical magnification ratio in the normal (100%) copy mode, then adjust in the zoom copy mode. Never reverse the sequence.
The vertical magnification ratio adjustment in the zoom copy mode must be performed when the vertical magnification ratio in the normal (100%) copy mode is proper but the copy size is not proper in the zoom copy mode.
The vertical magnification ratio adjustment must be performed in advance to the horizontal copy magnification ratio adjustment. Never reverse the sequence. (The horizontal copy magnification ratio is based on the vertical copy magnification ratio.)

IV. Cases when the adjustment is required

1) When the lens and the mirror unit are disassembled or the part is replaced.
2) When the scanner unit drive section is disassembled or the part is replaced.
3) When the main PWB is replaced.
4) When the RAM in the main PWB is replaced.
5) When "U2" trouble occurs.
6) When the position of the lens home position sensor is changed.
7) When the lens home position sensor is replaced.
8) When the copy image distortion adjustment is performed.
9) When the center position of copy image is adjusted.
10) When the focus is adjusted.

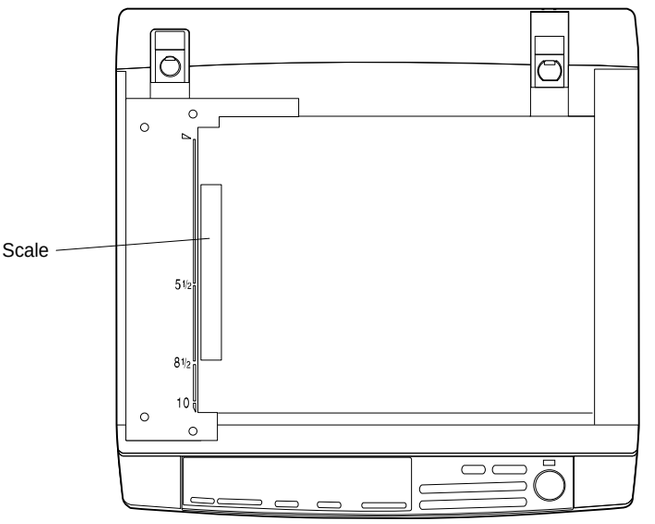
V. Necessary tools

* Screwdriver (+)
* Scale

VI. Adjustment procedure

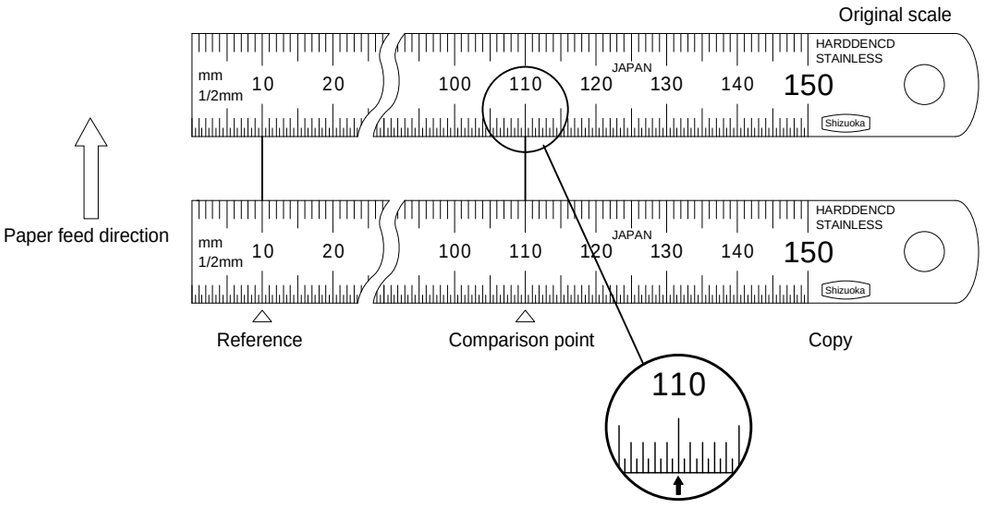
(Normal (100%) copy mode: Vertical copy magnification ratio adjustment)

1) Set the scale vertically on the document table. (Use a long scale for precise adjustment.)



2) Set the copy magnification ratio to 100%.
3) Make a copy on A3 or 11" x 17" paper.
4) Measure the length of the copied scale image.

(When a 100mm scale is used as the original.)



5) Calculate the vertical copy magnification ratio.

   Vertical copy magnification ratio = $\frac{\text{Copy image size}}{\text{Original size}}$ x 100 (%)

6) Check that the actual copy magnification ratio is within the specified range (100 ±0.8%).
   If it is out of the specified range, perform the following procedures.

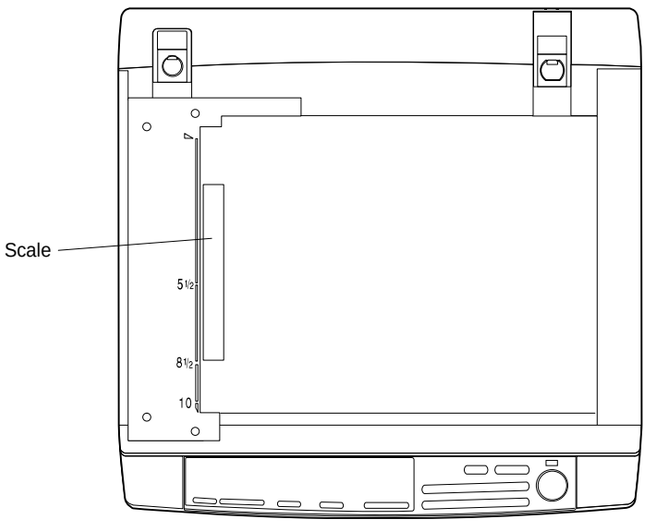
7) Execute simulations 48-1. (C → 0 → 0 → C → 48 → CB → 1 → CB)
   The set vertical copy magnification ratio will be displayed in the COPIES SELECTED display.

8) Enter a new vertical copy magnification ratio with the numeric key and press PRINT button. The above procedure changes the lens home position and the vertical copy magnification ratio.
   When the copy magnification ratio is set to a larger value, the actual copy magnification ratio becomes larger.
   When the copy magnification ratio is set to a smaller value, the actual copy magnification ratio becomes smaller.

Repeat procedures 1) to 8) until the vertical copy magnification ratio in the normal (100%) copy mode is within the specified range.

b. Vertical copy magnification ratio adjustment (Zoom copy)

1) Set a scale vertically on the document table as shown below: (Use a long scale for precise adjustment.)



2) Set the copy magnification ratio to the max. level.

3) Make a copy on A4 or 8 1/2" x 11" paper.

4) Measure the length of the copied scale image.

5) Calculate the vertical copy magnification ratio.

   Vertical copy magnification ratio = $\frac{\text{Copy image size}}{\text{Original size}}$ x 100 (%)

6) Check that the actual copy magnification ratio is within the specified range (129 ±0.9%).
   If it is out of the specified range, perform the following procedures.

7) Execute simulations 26-8. (C → 0 → 0 → C → 26 → CB → 8 → CB)
   The set vertical copy magnification ratio in the zoom copy mode will be displayed in the COPIES SELECTED display.

8) Enter a new vertical copy magnification ratio with the numeric key and press PRINT button. The above procedure changes the lens shift ratio and the vertical copy magnification ratio in the zoom copy mode.
   When the copy magnification ratio is set to a larger value, the actual copy magnification ratio becomes larger.
   When the copy magnification ratio is set to a smaller value, the actual copy magnification ratio becomes smaller.

Repeat procedures 1) to 8) until the vertical copy magnification ratio in the zoom copy mode is within the specified range.

VII. Troubles caused by improper adjustment

c. Horizontal copy magnification ratio adjustment (Zoom copy)

I. Summary

The horizontal copy magnification ratio adjustment must be performed in the document table copy mode and in the SPF copy mode. In the document table copy mode, scanning speed is changed with simulations 48-2 to adjust the horizontal copy magnification ratio.
In the SPF copy mode, document feed speed (SPF motor rotating speed) is changed with simulations 48-3 to adjust the horizontal copy magnification ratio.

II. Purpose
The purpose of this adjustment is to fit the displayed copy magnification ratio with the actual copy magnification ratio.

III. Note
Before performing this adjustment, the following adjustments must have been completed. If not, this adjustment cannot be performed properly.

* Image distortion adjustment
* Focus adjustment
* Vertical copy magnification adjustment

IV. Cases when the adjustment is required

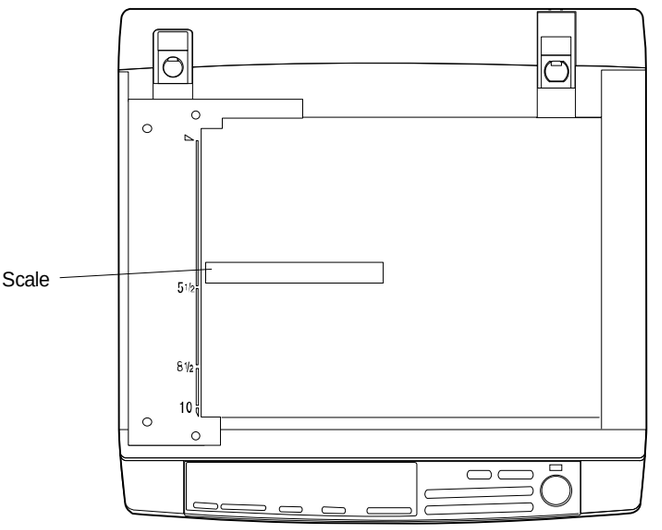
1) When the lens and the mirror unit are disassembled or the part is replaced.
2) When the scanner unit drive section is disassembled or the part is replaced.
3) When the main PWB is replaced.
4) When the RAM in the main PWB is replaced.
5) When "U2" trouble occurs.
6) When the copy image distortion adjustment is performed.
7) When the center position of copy image is adjusted.
8) When the focus is adjusted.

V. Necessary tools

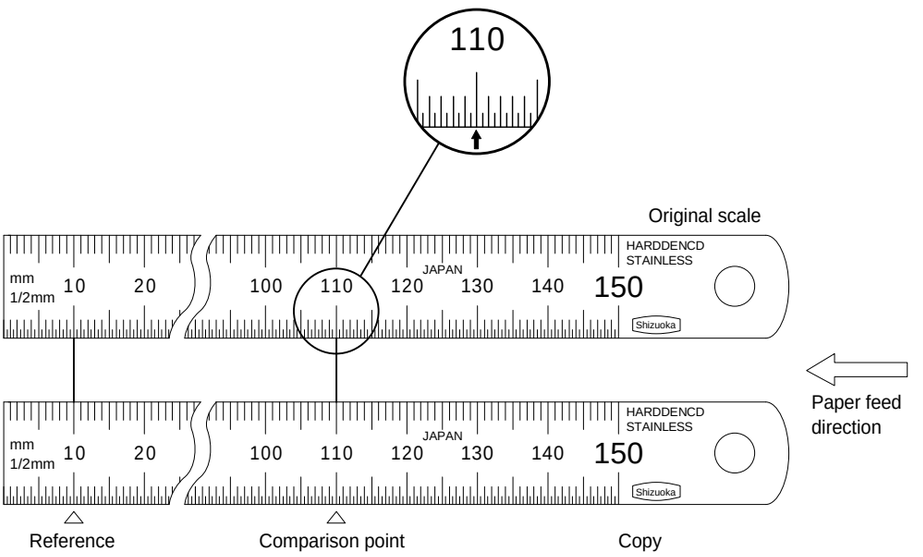
* Screwdriver (+)
* Scale

VI. Adjustment procedure
(Document table copy mode: Horizontal copy magnification ratio adjustment)

1) Set the scale on the document table as shown below. (Use a long scale for precise adjustment.)



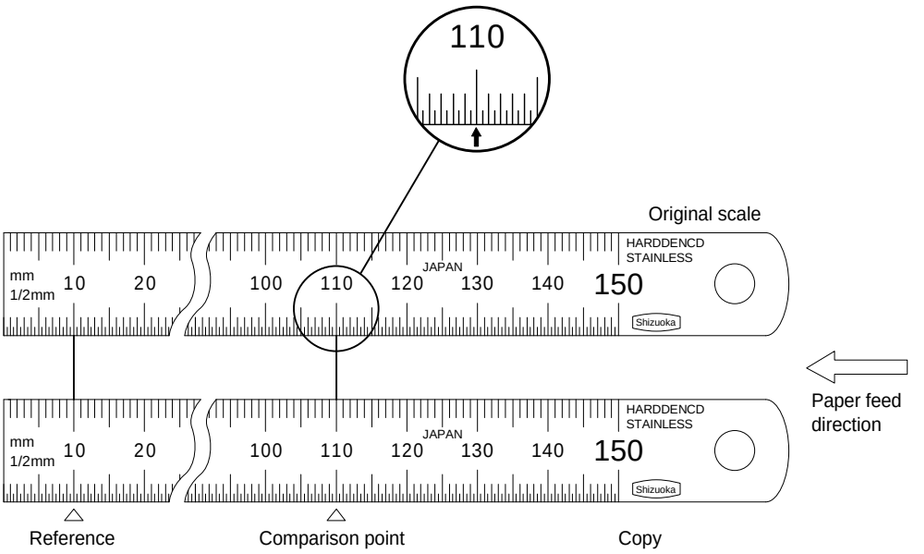
2) Set the copy magnification ratio to 100%.
3) Make a copy on A3 or 11" x 17" paper.
4) Measure the length of the copied scale image.



5) Calculate the horizontal copy magnification ratio.
Horizontal copy magnification ratio = $\frac{\text{Copy image size}}{\text{Original size}}$ x 100 (%)
6) Check that the actual copy magnification ratio is within the specified range (100 ±0.8%).
If it is out of the specified range, perform the following procedures.
7) Execute simulations 48-2. (C → 0 → 0 → C → 48 → CB → 2 → CB)
The set horizontal copy magnification ratio will be displayed in the COPIES SELECTED display.
8) Enter a new horizontal copy magnification ratio with the numeric key and press PRINT button. The above procedure changes the lens home position and the horizontal copy magnification ratio.
When the copy magnification ratio is set to a larger value, the actual copy magnification ratio becomes larger.
When the copy magnification ratio is set to a smaller value, the actual copy magnification ratio becomes smaller.

Repeat procedures 1) to 8) until the horizontal copy magnification ratio in the normal (100%) copy mode is within the specified range. (SPF copy mode: Horizontal copy magnification ratio adjustment)

1) Set the copied scale image paper which was made in the horizontal copy magnification ratio adjustment in the document table copy mode so that the scale image is horizontal in the SPF.
   Note that the copy magnification ratio of the copied scale image must be proper.
2) Set the copy magnification ratio to 100%.
3) Make a copy on A4 or 8 1/2" x 11" paper.
4) Measure the length of the copied scale image.



5) Calculate the horizontal copy magnification ratio.
   Horizontal copy magnification ratio = $\frac{\text{Copy image size}}{\text{Original size}}$ x 100 (%)
6) Check that the actual copy magnification ratio is within the specified range (100 ±0.8%).
   If it is out of the specified range, perform the following procedures.
7) Execute simulations 48-3. (C → 0 → 0 → C → 48 → CB → 3 → CB)
   The set horizontal copy magnification ratio in the SPF copy mode will be displayed in the COPIES SELECTED display.
8) Enter a new horizontal copy magnification ratio with the numeric key and press PRINT button. The above procedure changes the document feed speed of the SPF and the horizontal copy magnification ratio.
   When the copy magnification ratio is set to a larger value, the actual copy magnification ratio becomes larger.
   When the copy magnification ratio is set to a smaller value, the actual copy magnification ratio becomes smaller.
   Repeat procedures 1) to 8) until the horizontal copy magnification ratio in the SPF copy mode is within the specified range.

VII. Troubles caused by improper adjustment

(7) Uniformity adjustment

I. Summary
   The uniformity adjustment is performed by changing the exposure plate position attached to No.1 scanner unit.
   The above procedure changes the balance of light quantity radiated onto the document.

II. Purpose
   The purpose of this adjustment is to have uniform copy density.

III. Note
   When this adjustment is performed, the exposure will be changed. Therefore, the copy density adjustment must be performed after this adjustment. Also, this adjustment must be performed always before the copy density adjustment.

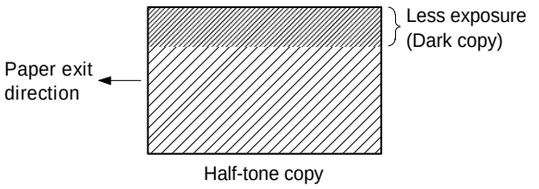
IV. Cases when the adjustment is required
   1) When the reflector is replaced.
   2) When the copy lamp is replaced.
   3) When the exposure adjustment plate is disassembled or replaced.
   4) In maintenance

V. Necessary tools
   * Screwdriver (+)
   * A4 or 8 1/2" x 11" paper
   * Half-tone paper of A4 or 8 1/2" x 11" or larger

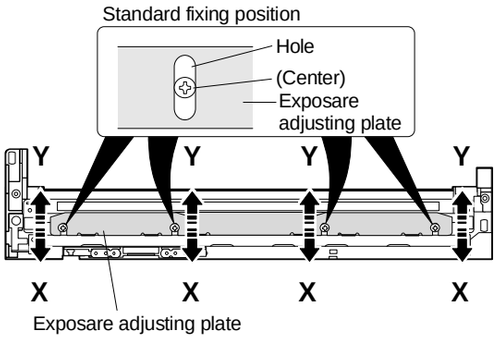
VI. Adjustment procedure

1) Set a half-tone paper of A4 or 8 1/2" x 11" on the document table.
2) Set the exposure level to the min. level in the photo mode, and make a copy on A4 or 8 1/2" x 11" paper.
3) Check the uniformity. If there is any unevenness, perform the following procedures.
4) Move the exposure adjustment plate of the lighter copy section towards Y or move the exposure adjustment plate of the darker copy section towards X.

   (Example)
   If a copy shown below is made, move the front frame side of the sub exposure adjustment plate in the direction of X to adjust the exposure balance.



[Fig. 1]

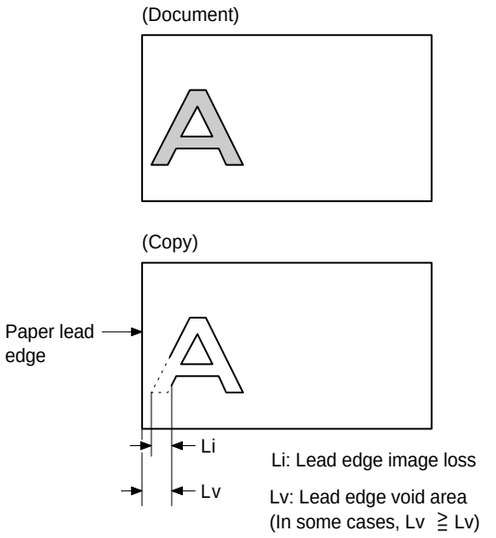


5) Make a copy in the same manner as procedure 2), and check the uniformity.
   Repeat procedures 1) to 5) until proper uniformity is obtained.

VII. Troubles caused by improper adjustment

(8) Image loss/void area adjustment

The image loss/void area adjustment is performed by the combination of the copied image position adjustment on the copy paper and the void area adjustment.
Since the image loss and the void area are closely related each other, they must be adjusted simultaneously.
(Definitions of image loss and void area)
Void area: Empty (white) area on a copy paper (without toner on it)
Image loss: The quantity (length) of an image lost on a copy paper.



a. Copy image position adjustment (SF-2014/2114)

I. Summary

In order to adjust the copy image position on a copy paper, the lead edge position of an image on the photoconductor for the lead edge position of a document on the document table is changed with simulations 50-1, and the relative position of the paper to the image position on the photoconductor is changed.
In the models which have no zoom copy functions, however, the lead edge position of an image on the photoconductor for the lead edge position of a document on the document table is not changed.
The relative position of the paper is changed at OFF timing of the scanner home position sensor after starting scanning to adjust the copy image position on the paper.
On the SF-2214, to adjust the copy image position on a copy paper, the lead edge position of an image on the photoconductor for the lead edge position of a document on the SPF is changed with simulations 50-1.
After adjusting the copy image position with the above procedure, the M.C grid OFF timing for the lead edge position of an image on the photoconductor is changed with simulations 45-1 to adjust the void area.

II. Purpose

The purpose od this adjustment is to improve separation in the photoconductor section and in the fuser section and reduce dirt on the fuser section pawl by obtaining the max. effective copy area and the proper void area.

III. Note

If the proper void area is not obtained, the separation ability in the photoconductor section may be degraded and dirt on the fuser section pawl may be increased.
Before performing this adjustment, the following adjustments must have been completed. If not, this adjustment cannot be performed properly.

* Adjustment of paper pressure against the SPF resist roller (Sim 51-2 set value must be properly set.)
* Adjustment of the copy image position on the copy paper (Sim 50-1 set value must be properly set.)

IV. Cases when the adjustment is required

1) When the optical section is disassembled or its part is replaced (including the scanner home position sensor).
2) When the SPF unit is disassembled or its part is replaced.
3) When the main PWB is replaced.
4) When the RAM in the main PWB is replaced.
5) When "U2" trouble occurs.
6) When the resist roller unit is disassembled or replaced.
7) When the blank lamp is replaced.

V. Necessary tools

* Screwdriver
* Scale
* Test chart
* Black background document

(Copy image position adjustment)

1) Execute simulations 45-1. (C → 0→ 0 → 45 → CB → 1 → CB)
   Simulations 45 is to adjust the size of the void area in the lead edge of the copy paper.
   The set adjustment value is displayed on the COPIES SELECTED display.
2) Set the set value of simulations 45-1 to "0."
   Enter "0" with the numeric key and press PRINT button.
3) Execute simulations 50-1. (C → 0 → 0 → C → 50 → CB → 1 → CB)
   This simulations is to adjust the copy image position for the paper. One of the set adjustment values is displayed on the COPIES SELECTED display.

   Adjustment value A (SF-2114/2214): Corresponds to the time interval from the scanner unit starting and the scanner home position sensor OFF to reaching at the lead edge of the document. That is, this is the value used to determine the optical document lead edge reference position, and it must be fit with the edge section of the document reference plate.
   If this value is improper, when the copy magnification ratio is changed, the copy image lead edge position for the copy paper edge will fluctuate. (Does not exist in the models which have no zoom copy functions.)

   Adjustment value B (SF-2114/2214): Corresponds to the time interval from the scanner unit starting and the scanner home position sensor OFF to the resist roller ON.
   According to this value, the paper feed timing for the image on the photoconductor drum is changed and the copy image position on the copy paper is also changed.
   When the set value is changed by "1," the position of the copy image on the copy paper is changed by about 0.123 mm.
   When the set value is made greater, the copy image position for the copy paper moves backward. When the set value is made greater, the copy image position for the copy paper moves forward.

   Adjustment value C: Corresponds to the time interval from the SPF resist roller ON to the copier resist roller ON. This value is used to change the paper feed timing for the image on the photoconductor drum and to change the copy image position on the copy paper.
   When the set value is changed by "1," the copy image position is changed by about 0.123 mm.
   When the set value is made greater, the copy image position for the copy paper moves backward. When the set value is made greater, the copy image position for the copy paper moves forward.

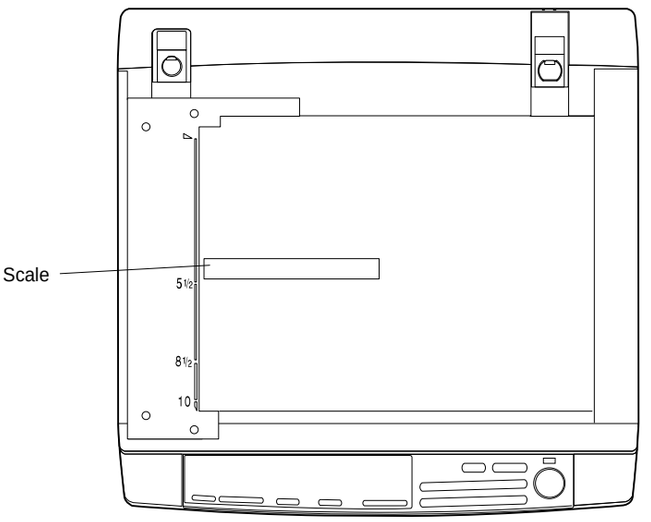
   Adjustment value A (SF-2014): Corresponds to the time interval from the scanner unit starting and the scanner home position sensor OFF to the resist roller ON.
   According to this value, the paper feed timing for the image on the photoconductor drum is changed and the copy image position on the copy paper is also changed.
   When the set value is changed by "1," the position of the copy image on the copy paper is changed by about 0.123 mm.
   When the set value is made greater, the copy image position for the copy paper moves backward. When the set value is made greater, the copy image position for the copy paper moves forward.

   Use the paper tray select key to select the display of adjustment value A, adjustment value B, and to select the set mode.

Display lamp	Display content/set mode
Copier tray cassette paper feed lamp ON.	Adjustment value A
Copier tray cassette paper feed lamp BLINKS.	Adjustment value B (SF-2114/2214)
Copier tray cassette/option tray cassette paper feed lamps ON.	Adjustment value C (SF-2214 only)

4) Set adjustment value A, adjustment value B, and adjustment value C to "0." (For the model without zoom functions, set adjustment value B only.)
   Enter "0" with the numeric key and press PRINT button.

5) Press the scale onto the document alignment plate and set it horizontally as shown below:

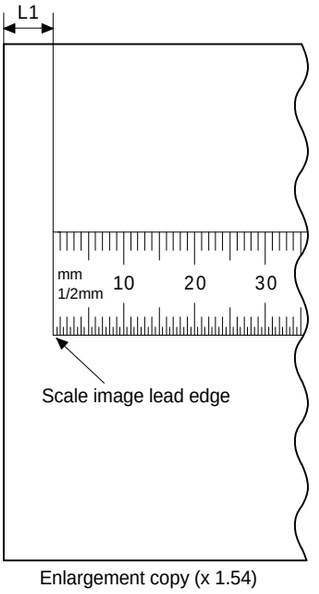


6) Execute simulations 50-1 to make several copies at each of 129% and 64%.
(For the models without zoom functions, make several copies at 100%.)

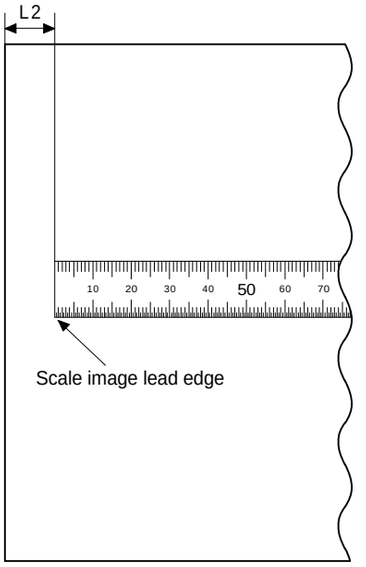
7) Measure the distance from the paper lead edge to the copy image lead edge of each copied papers, and calculate the average value.
(Not required for the models without zoom functions.)

L1: Average distance (mm) from 129% copied paper lead edge to the copy image lead edge

L2: Average distance (mm) from 64% copied paper lead edge to the copy image lead edge



Enlargement copy (x 1.54)



Reduction copy (x 0.64)

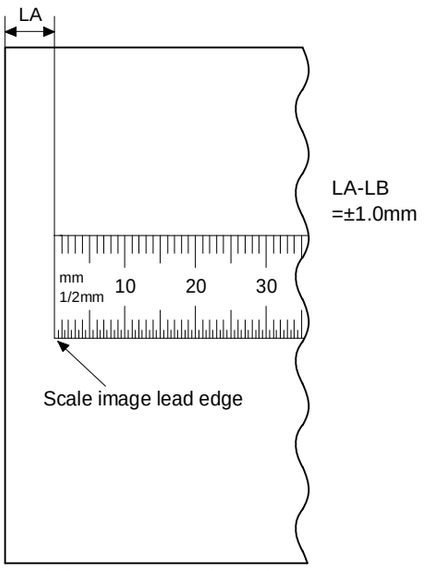
8) Enter the measure values in procedure 7) into the formula below to calculate adjustment value A and adjustment value B. (Not required for the models without zoom functions.) (Zoom model only)
A = 8.2423 x (L1 – L2)
B = 16.0568 x L2 – 7.9661 x L1

9) Set the adjustment values obtained in procedure 8). (Not required for the models without zoom functions.)

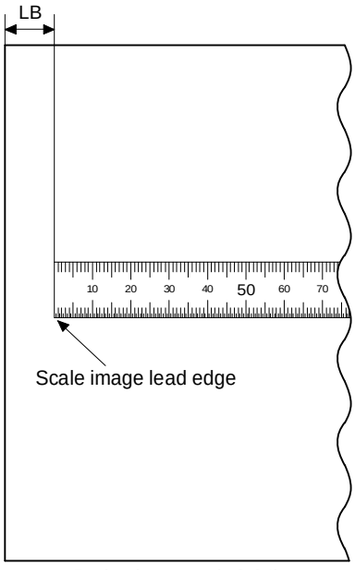
10) Execute simulations 50-1 to make several copies at each of 129% and 64%. (Not required for the models without zoom functions.) (Zoom model only)

11) Measure the distance from the paper lead edge to the copy image lead edge of each copied papers (129% and 64%), and calculate the average value.
(Not required for the models without zoom functions.) (Zoom model only)

12) Check that the difference between the distance from the copy paper lead edge to the copy image lead edge of 129% copy and that of 64% copy is in the range of 0 ± 1.0 mm. (Not required for the models without zoom functions.)
If the difference is out of the above range, change adjustment value A and repeat procedures 10) and 12) until the difference is within the above range.
If adjustment value A is improper, the copy image lead edge position fluctuates in proportion to the copy magnification ratio.

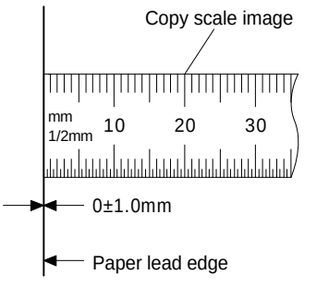


Enlargement copy (x 1.54)



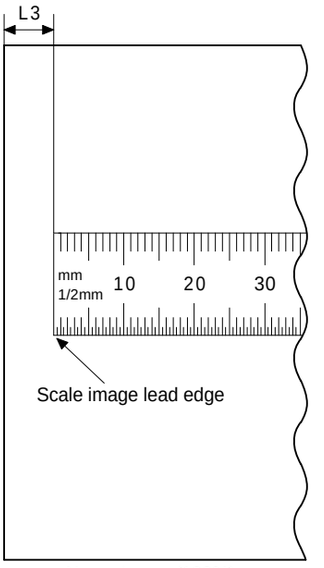
Reduction copy (x 0.64)

13) Make a 100% copy, and check that the copy image lead edge is in the range of 0 ±1.5 mm from the paper lead edge position reference.
If it is out of the above range, change adjustment value B and repeat procedure 13) until it is within the above range.



14) Set documents in the SPF, and make several copies at 100% with simulations 50-1.

15) Measure the distance from the paper led edge to the copy image lead edge of each copy paper, and calculate the average value.



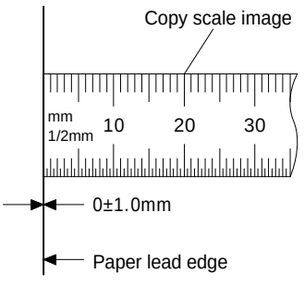
Normal copy (100%)

L3: Average distance (mm) from the copy paper lead edge to the copy image lead edge (Only in the SPF models)

16) Substitute the average value obtained in procedure 15) for L3 in the formula below to obtain adjustment value C.
C = 8.0906 x L3 (Only the SPF models)

17) Set the adjustment value obtained in procedure 16). (Only the SPF models)

18) Set documents in the SPF, make 100% copies, and check that the copy image lead edge is in the range of 0 ± 1mm from the paper lead edge position reference. (Only the SPF models)
If it is out of the above range, change adjustment value C and repeat procedure 18) until it is in the range of the above range.



b. Void area adjustment

I. Summary
The copy image position on the copy paper is adjusted with simulations 50-1, then the main corona grid ON timing for the image lead edge on the photoconductor is changed with simulations 45 to adjust the lead edge void area.
In concrete, in the case of the document table mode, the adjustment is performed by changing the time interval from the scanner motor ON to the main corona grid ON. In the case of the SPF mode, the adjustment is performed by changing the time interval from the SPF resist roller ON to the main corona grid ON.
On the other hand, the rear edge void is adjusted by varying the OFF timing of the main corona grid after the PPD detects the rear edge of paper and turns off.
There are two kinds of the rear edge void adjustment. One is in the cassette paper feed mode, and the other is in the manual paper feed mode.
Selection of the adjustment mode is made by the paper feed unit select button and the display lamp.

Mode	Paper cassette	Manual Paper feed unit lamp
Lead edge void amount adjustment mode	Light	—
Read edge void amount adjustment mode (Paper cassette)	Blink	—
Read edge void amount adjustment mode (Manual paper feed)	—	Blink

II. Purpose
The purpose od this adjustment is to improve separation in the photoconductor section and in the fuser section and reduce dirt on the fuser section pawl by obtaining the max. effective copy area and the proper void area.

III. Note
If the proper void area is not obtained, the separation ability in the photoconductor section may be degraded and dirt on the fuser section pawl may be increased.
Before performing this adjustment, the following adjustment must have been completed. If not, this adjustment cannot be performed properly.

* Adjustment of paper pressure against the resist roller (Sim 51-2 set value must be properly set.)
* Adjustment of paper pressure against the SPF resist roller (Sim 51-2 set value must be properly set.)
* Adjustment of copy image position (Sim 50-1)

IV. Cases when the adjustment is required

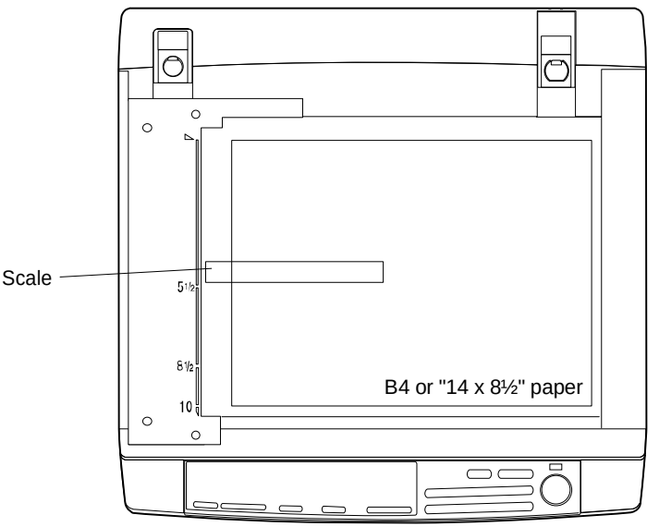
1) When the optical section is disassembled or its part is replaced (including the scanner home position sensor).
2) When the SPF unit is disassembled or its part is replaced.
3) When the main PWB is replaced.
4) When the RAM in the main PWB is replaced.
5) When "U2" trouble occurs.
6) When the resist roller unit is disassembled or replaced.

V. Necessary tools

* Screwdriver
* Scale
* Test chart
* Black background document

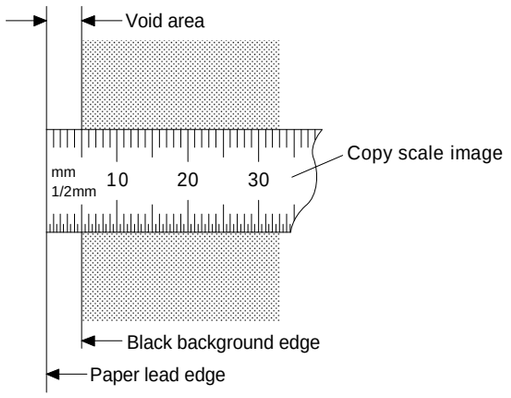
VI. Adjustment procedure
(Lead edge void area adjustment)

1) Press the scale onto the document alignment plate and set it horizontally as shown below:



2) Execute simulations 45-1. (C → 0 → 0 → C → 45 → CB → 1 → CB)
Simulations 45-1 is to adjust the size of the void area in the lead edge of the copy paper.
The set adjustment value is displayed on the COPIES SELECTED display.
Press the paper feed unit select button to light the cassette paper feed lamp and set the machine to the lead edge void adjustment mode.
3) Set the adjustment value to "99."
Enter "99" with the numeric key, and press PRINT button.
4) With the document cover open, make several copies at 100%.

5) Measure the lead edge void area of each copy.



6) Calculate the average void area.

7) Calculate the void area adjustment value from the formula shown below.

Current set value (99) – $\frac{\text{current void area (mm)}}{0.123}$

= Adjustment value (Decimal point rounded)

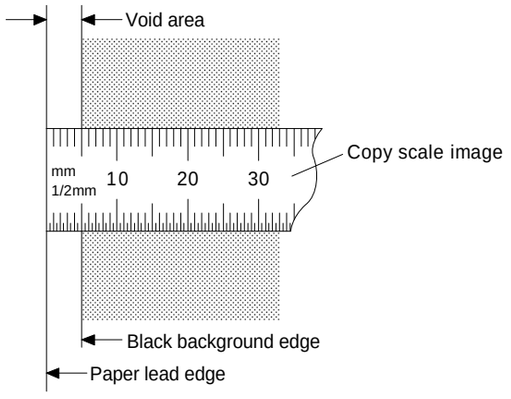
8) Set the adjustment value obtained in procedure 7). (Decimal point rounded off)

9) With the document cover open, make several copies at 100%.

10) Measure the copy lead edge void area.

11) Measure the distance from the paper lead edge to the copy image lead edge of each copied papers (129% and 64%), and calculate the average value.
(Not required for the models without zoom functions.)

12) Check that the void area is within the specified range.



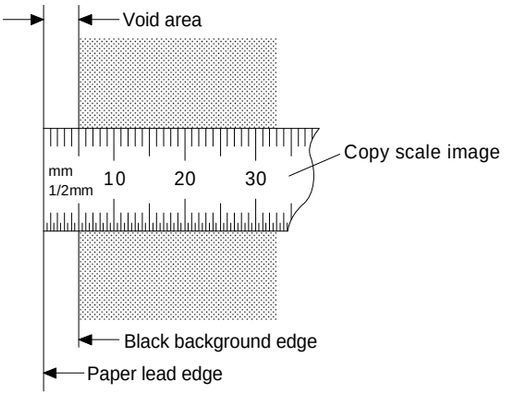
Standard:

0^{+3}_{-0} mm

If the void area is outside the specified range, change the set value of simulations 45 and repeat procedures 9) to 12).

When the set value is changed by "1," the void area is changed by about 0.123 mm.
When the set value is made greater, the void area becomes greater, and vise versa.

13) Make a copy in the SPF mode and check that the void area is within the specified range.



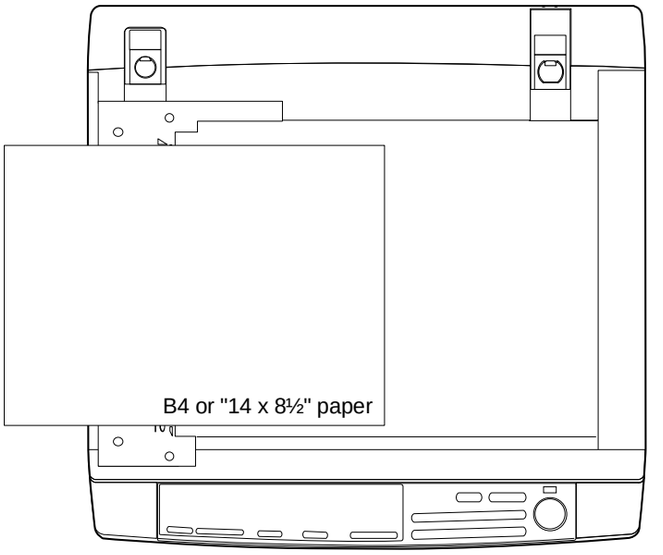
Standard:

0^{+3}_{-0} mm

If the void area is outside the specified range, check adjustment value C of simulations 50-1 or check the SPF unit mechanism section.

(End edge void area adjustment) Cassette paper feed mode

1) Set a scale and A4 or 8 1/2" x 11" paper on the document table as shown below:

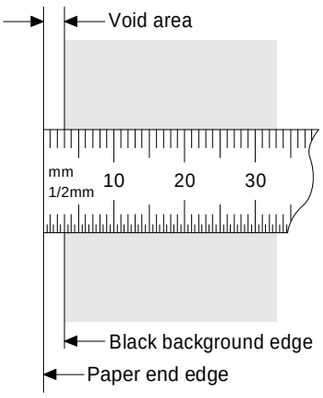


2) Execute simulations 45. (C → 0 → 0 → C → 45 → CB → 1 → CB)
The set adjustment value is displayed on the COPIES SELECTED display.
Press the paper feed unit select button to blink the cassette paper feed lamp and to set the machine to the end edge void adjustment mode in the cassette paper feed mode.

3) Set the adjustment value to "99."
Enter "99" with the numeric key, and press PRINT button.

4) With the document cover open, make several copies at 100%.

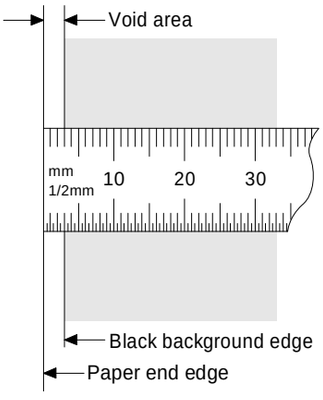
5) Measure the end edge void area of each copy.



6) Calculate the average void area.
7) Calculate the void area adjustment value from the formula shown below.

   Current set value (99) – $\frac{\text{current void area (mm)}}{0.123}$

   = Adjustment value (Decimal point rounded)
8) Set the adjustment value obtained in procedure 7). (Decimal point rounded off)
9) With the document cover open, make several copies at 100%.
10) Measure the copy lead edge void area.
11) Measure the distance from the paper end edge to the copy image lead edge of each copied papers (129% and 64%), and calculate the average value.
    (Not required for the models without zoom functions.)
12) Check that the void area is within the specified range.



Standard:

0^{+3}_{-0} mm

If the void area is outside the specified range, change the set value of simulations 45 and repeat procedures 9) to 12).

When the set value is changed by "1," the void area is changed by about 0.123 mm.
When the set value is made greater, the void area becomes greater, and vise versa.

(End edge void area adjustment) Paper feed tray mode

1) Press the paper feed unit select button to blink the manual paper feed lamp and to set the machine to the rear edge void adjustment mode in the manual paper feed mode.
2) Perform the end edge void adjustment in the manual paper feed mode similarly with the end edge void adjustment in the cassette paper feed mode.

3. COPY DENSITY ADJUSTMENT

(1) Copy density adjustment timing

The copy density adjustment must be performed in the following cases:

- ✶ When in maintenance.
- ✶ When the high voltage unit output current or voltage is adjusted.
- ✶ When the developing bias voltage is adjusted.
- ✶ When the copy lamp is replaced.
- ✶ When the optical section is cleaned.
- ✶ When an optical part is replaced.
- ✶ When the optical section is disassembled.
- ✶ When the photoconductor drum is replaced.
- ✶ When the developer is replaced.
- ✶ When the AE sensor is replaced.
- ✶ When the main control PWB is replaced.
- ✶ When the EEPROM on the main control PWB is replaced.
- ✶ When the memory trouble (U2) occurs.
- ✶ When a part of the copy lamp control circuit is replaced.
- ✶ When the AC power source PWB is replaced.

(2) Note for copy density adjustment

1) Necessary procedures before adjustment

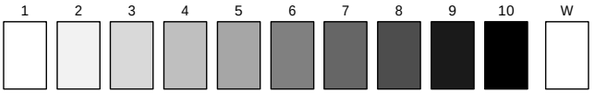
- ✶ Clean the optical section.
- ✶ Clean the AE sensor.
- ✶ Clean or replace the charger wire.
- ✶ Check that the high voltage section voltage and the developing bias voltage are in the specified range.

2) Note

- ✶ The auto mode copy density adjustment must be performed after the normal mode copy density adjustment. Never reverse the sequence.

(3) Necessary items for the copy density adjustment

- ✶ Test chart
  (Use one of the following three: UKOG-0162FCZZ, UKOG-0089CSZZ, KODAK GRAY SCALE)
- ✶ B4 (14″ × 8 1/2″) white paper



Test chart comparison

UKOG-0162FCZZ DENSITY No.	1	2	3	4	5	6	7	8	9	10	W
UKOG-0089CSZZ DENSITY No.	0.1		0.2		0.3				0.5	1.9	0
KODAK GRAY SCALE		1		2		3		4		19	A

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(4) Copy density adjustment mode

The copy density adjustment must be performed in the following five mode:

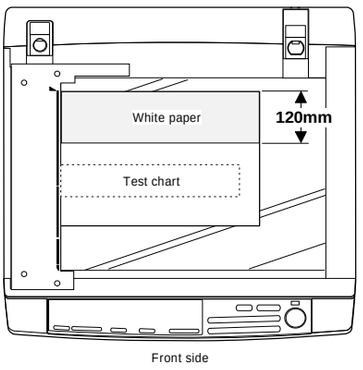
Copy density adjustment mode			Exposure level		Sim No
Original table copy mode	Normal mode	Non-toner-save mode	1	5	46-1
		Toner save mode	1	5	
	Photo mode	Non-toner-save mode	1	5	
	Auto mode	Non-toner-save mode	1	5	
		Toner save mode	1	5	
SPF copy mode	Normal mode	Non-toner-save mode	Set to the copy mode in the original table copy mode.		51-6
		Toner save mode			
	Photo mode	Non-toner-save mode			
	Auto mode	Non-toner-save mode			
		Toner save mode			

(5) Copy density adjustment procedure

The copy density is adjusted by using Simulations 46 to change the exposure level and the copy lamp voltage in each copy mode.
The copy density adjustment must be performed in the five modes. To select each mode, use the copy mode select key.
In the SF-2214, copy density adjustment in the SPF copy mode is also performed.

A. Test chart (UK0G-0162FCZZ) setting

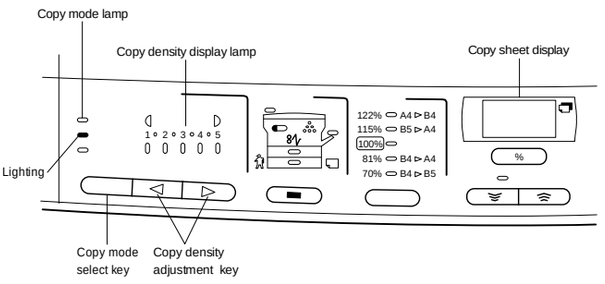
1) Set the test chart and B4 (14″ × 8 1/2″) white paper on the original table as shown below.
   The sensing area of the AE sensor is about 120 mm wide from the rear frame side edge on the original table glass. Place the white paper on that area, but keep the test chart away from that area.



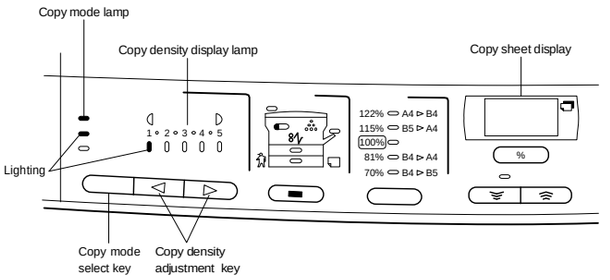
2) Close the document cover.
3) Execute Sim 47.
4) Cancel the Sim 47 after off the copy lamp.

B. Normal copy mode (Non-toner-save mode) copy density adjustment

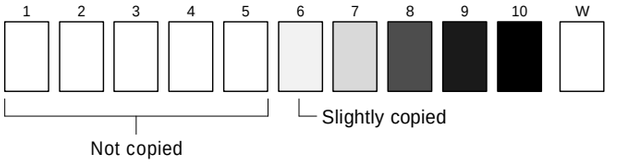
1) Enter the simulations 46-1 mode.
2) Set the adjustment mode to the normal copy mode (Non-toner-save mode).
   (Press the copy mode select key to light the normal copy mode lamp.)



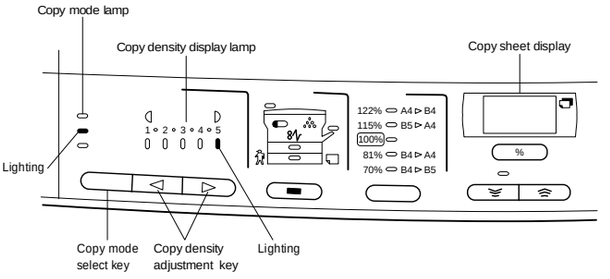
3) Set the density level to "1" with the copy density adjustment key. (The currently set copy lamp voltage level will be displayed on the COPIES SELECTED display.)



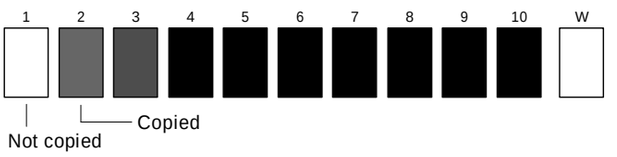
4) Press the print button to make a copy.
Check the gray scale copy to insure that "6" is slightly copied and "5" is not copied.
When the copy density is too dark, increase the copy lamp voltage level.
When the copy density is too light, decrease the copy lamp voltage level.
Enter a new set value of the copy lamp voltage level with the numeric keys and press the print button, then the entered value will be set and the copy density will be adjusted according to the set value.



5) Set the copy density level to "5" with the copy density adjustment key.
(The currently set copy lamp voltage level will be displayed on the COPIES SELECTED display.)

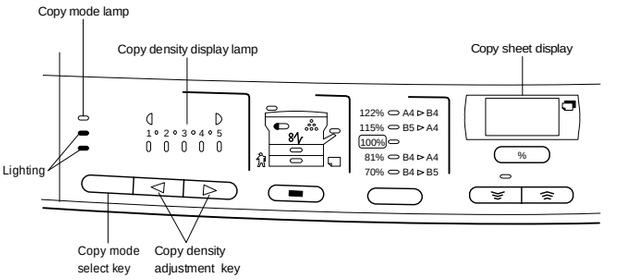


6) Press the print key to make a copy.
Check the gray scale copy to insure that "2" is clearly copied and "1" is not copied.
When the copy density is too dark, increase the copy lamp voltage level.
When the copy density is too light, decrease the copy lamp voltage level.
Enter a new set value of the copy lamp voltage level with the numeric keys and press the print button, then the entered value will be set and the copy density will be adjusted according to the set value.



C. Normal copy mode (Toner save mode) copy density adjustment

1) Set the adjustment mode to the normal copy mode (Toner save mode). (Press the copy mode select key to light the normal copy mode lamp and the photo copy mode lamp.)

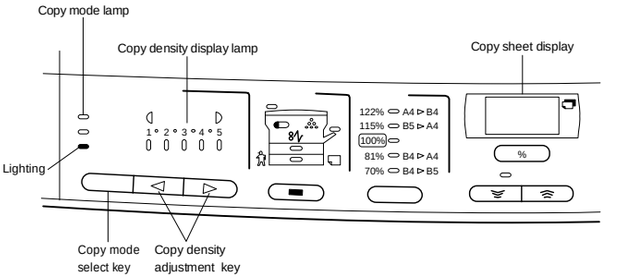


Adjust in the same manner as the above copy density adjustment procedures i the normal mode (Non-toner-save mode).

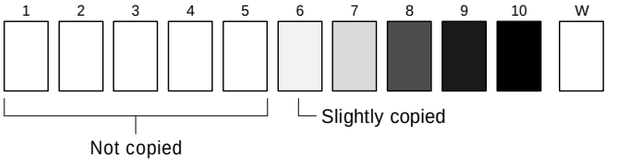
D. Photo copy mode (Non-toner-save mode) copy density adjustment

There is no toner save mode in the photo copy mode.

1) Set the adjustment mode to the photo copy mode.
(Press the copy mode select key to light the photo copy mode lamp.)

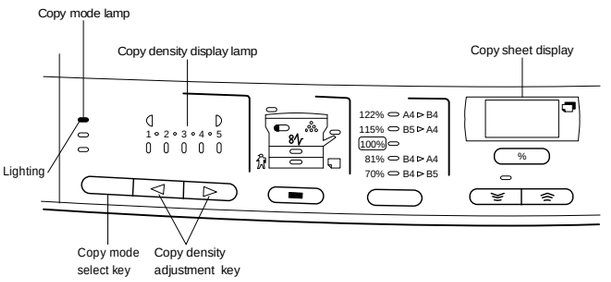


Check the gray scale copy to insure that "7" is slightly copied and "6" is not copied.
When the copy density is too dark, increase the copy lamp voltage level.
When the copy density is too light, decrease the copy lamp voltage level.
Enter a new set value of the copy lamp voltage level with the numeric keys and press the print button, then the entered value will be set and the copy density will be adjusted according to the set value.

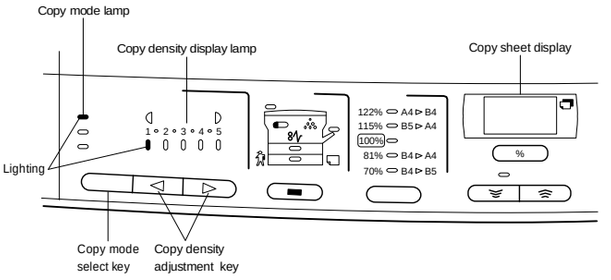


E. Auto copy mode (Non-toner-save mode) copy density adjustment

1) Set the adjustment mode to the auto copy mode (Non-toner-save mode). (Press the copy mode select key to light the auto copy mode lamp.)

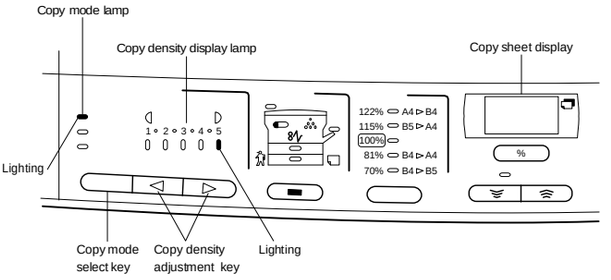


2) Set the density level to "1" with the copy density adjustment key. (The currently set copy lamp voltage level will be displayed on the COPIES SELECTED display.)

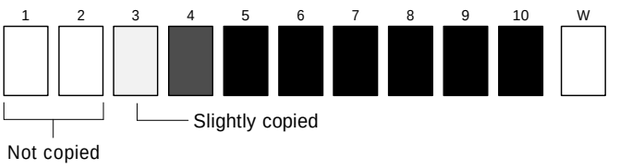


3) Set the copy lamp voltage level set value to "0."
Enter the new set value with the numeric key and press the print button, then the entered value will be set. (Be sure to set to "0.")

4) Set the copy density level to "5" with the copy density adjustment key.
(The currently set copy lamp voltage level will be displayed on the COPIES SELECTED display.)

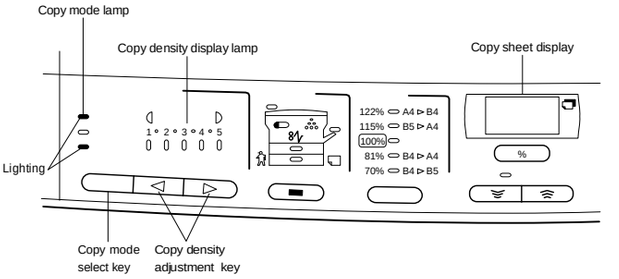


5) Press the print button to make a copy.
Check the gray scale copy to insure that "3" is slightly copied and "1" is not copied.
When the copy density is too dark, increase the copy lamp voltage level.
When the copy density is too light, decrease the copy lamp voltage level.
Enter a new set value of the copy lamp voltage level with the numeric keys and press the print button, then the entered value will be set and the copy density will be adjusted according to the set value.



F. Auto copy mode (Toner save mode) copy density adjustment

1) Set the adjustment mode to the auto copy mode (Toner save mode).
(Press the copy mode select key to light the auto copy mode lamp and the photo copy mode lamp.)



Adjust the copy density in the same manner as the Photo copy mode (Non-toner-save mode) copy density adjustment.

G. Copy density adjustment in the SPF copy mode

In copy density adjustment in the SPF copy mode, the copy density in each individual copy mode is not adjusted separately. All copy densities in the copy modes adjusted by the original table copy mode copy density adjustment are shifted together.
When, therefore, the original copy mode copy density is changed, this adjustment should be also performed.

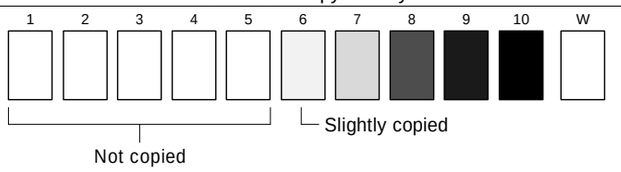
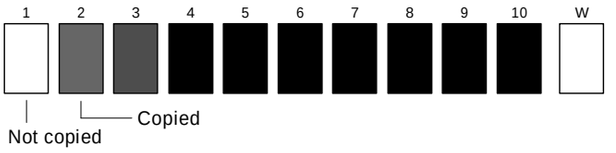
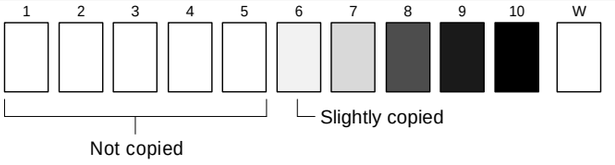
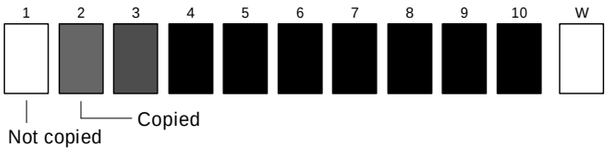
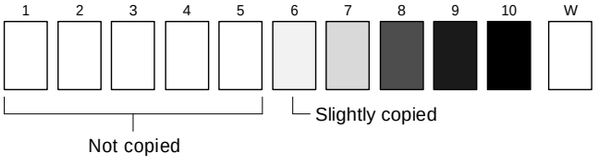
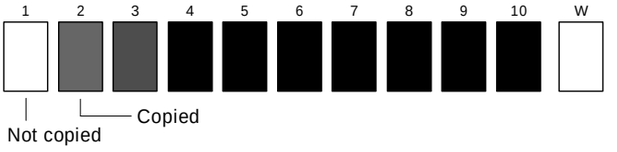
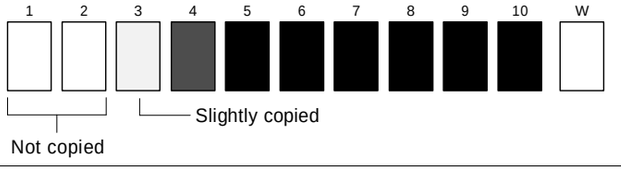
1) Execute Simulation 51-6.
The SPF copy mode copy density level is displayed on the copy quantity display.

2) Adjust the set value so that the copy density becomes the same as the original copy mode copy density level.
(Compare in the photo copy mode for clear distinction.)
The reference set value is "7" and the set value can be changed in the range of 0 ~ 99.

(6) Copy density adjustment table

A : Auto copy mode
P : Photo copy mode
N : Normal copy mode

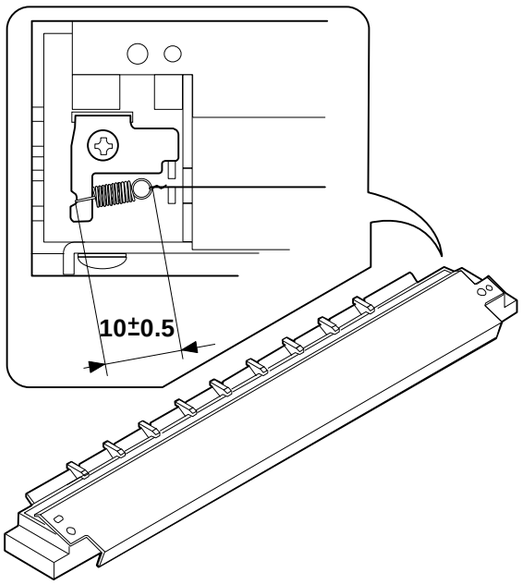
N.TS : Non-toner-save mode
TS : Toner save mode

Copy mode		Mode display	Density level	Test chart copy density
Normal	N.TS	N	1	
			5	
	TS	N & P	1	
			5	
Photo	N.TS	P	1	
			5	
Auto	N.TS	A	1	
			5	
	TS	A & P	1	
			5	

4. Others

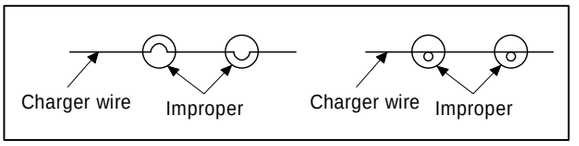
(1) Transfer charger wire installation

Install the transfer charger wire as shown below. (Clean the charger wire at every 40K copies and replace it at every 80K copies.)
Transfer charger unit (TC unit)



(Note for replacement of the charger wire)

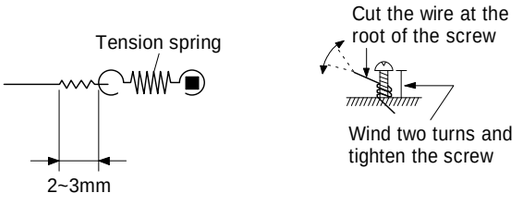
a Do not twist or deform the charger wire.



b After replacement, be sure to clean the charger wire with alcohol. (Be sure to use alcohol only.)

c After wiping with alcohol, wipe with a dry cloth.

d Use charger wire of 70μ (DWIR-0466CSZZ).



(2) How to adjust the separation corona voltage

1) Install the developer unit and OPC drum unit into the main body.
2) Set the hight voltage probe (1000:1) to digital multimeter.
3) Set the digital multimeter range to DC V.
4) Connect the digital multimeter to the SHVG check pin on the lower unit control PWB and chassis GND.
5) Execute simulation 8-7 and adjust the separation corona voltage to 3.5 ± 0.35v by rotates VR1 on the lower unit control PWB. (SHVG turns on 30 sec)

(3) How to adjust the developing bias voltage

1) Install the developer unit and OPC drum unit into the main body.
2) Set the digital multimeter range to DC 500V.
3) Connect the digital multimeter to the developing bias output terminal on the lower unit control PWB and chassis GND.
4) Execute simulation 8-1 and adjust the developing bias voltage to –200 ± 3v by rotates VR2 on the lower unit control PWB. (Developing bias turns on 30sec)

CORONA VOLTAGE IN THE EACH COPY MODE

COPY MODE		MAIN CORONA UNIT		TRANSFER CORONA VOLTAGE (V)	SEPAREATION CORONA VOLTAGE (V)
		MAIN CORONA VOLTAGE (V)	MAIN CORONA GRID VOLTAGE (V)		
N.T.S	NORMAL	–5.3Kv	780	–5.3Kv	+2.7Kv
	AE	–5.3Kv	780	–5.3Kv	+2.7Kv
	PHOTO	–5.3Kv	478	–5.3Kv	+2.7Kv
T.S	NORMAL	–5.3Kv	660	–5.3Kv	+2.7Kv
	AE	–5.3Kv	660	–5.3Kv	+2.7Kv

[8] SIMULATIONS

1. Outline

This model is equipped with the simulations feature which allows the following operations with the keys on the operation panel:

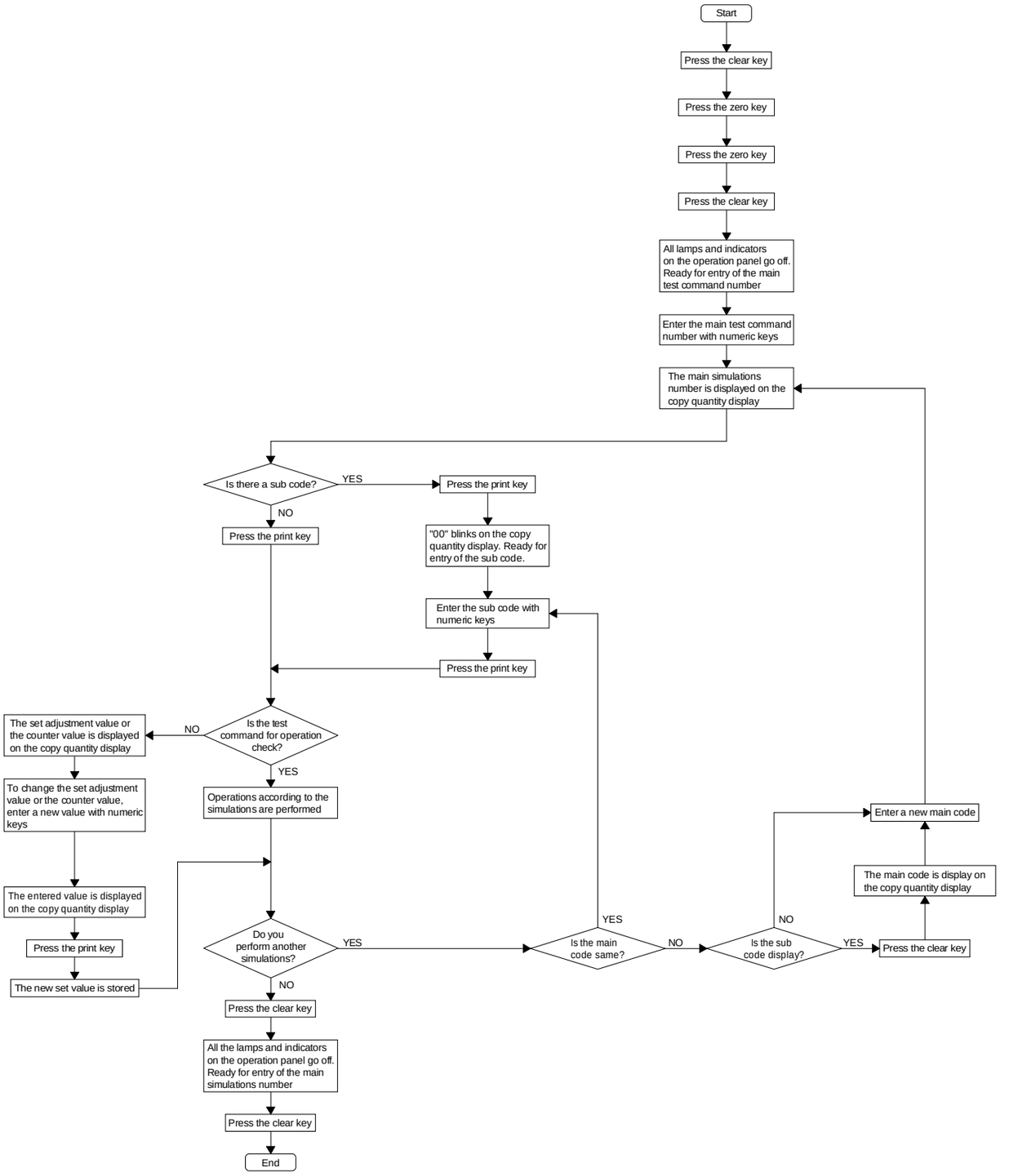
1) Adjustments
2) Setting of specifications and functions
3) Resetting trouble codes
4) Checking operations

2. Purpose

The purpose of the simulations feature is to improve serviceability in repairs and adjustments.
Since the mechanical adjustments can be performed electrically, the above purpose is achieved with low costs.

3. Operating procedure

Simulations operating procedure

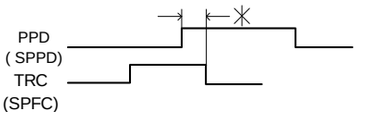

Start
Press the clear key
Press the zero key
Press the zero key
Press the clear key
All lamps and indicators on the operation panel go off. Ready for entry of the main test command number
Enter the main test command number with numeric keys
The main simulations number is displayed on the copy quantity display
Is there a sub code?
YES
NO
Press the print key
"00" blinks on the copy quantity display. Ready for entry of the sub code.
Enter the sub code with numeric keys
Press the print key
Press the print key
Is the test command for operation check?
NO
YES
The set adjustment value or the counter value is displayed on the copy quantity display
To change the set adjustment value or the counter value, enter a new value with numeric keys
The entered value is displayed on the copy quantity display
Press the print key
The new set value is stored
Operations according to the simulations are performed
Do you perform another simulations?
YES
NO
Press the clear key
All the lamps and indicators on the operation panel go off. Ready for entry of the main simulations number
Press the clear key
End
Is the main code same?
YES
NO
Is the sub code display?
NO
YES
Press the clear key
The main code is display on the copy quantity display
Enter a new main code

4. Purpose list

Purpose	Section	Main	Sub	Function	Ref. page
Adjustments	Paper feed section	51	2	Resist amount adjustment	8-3
	Optical section	26	8	Copy magnification ratio adjustment (zooming)	
		45	1	Lead edge void amount setting	
		46	1	Copy density (exposure level) adjustment	8-4
		51	6	SPF exposure correction	
		47		AE sensor characteristics value data auto input	8-5
		48	1	Front-rear direction magnification ratio adjustment (Vertical direction)	
			2	Paper transport direction magnification ratio adjustment (Horizontal direction)	
		50	1	Lead edge image position adjustment	8-6
	Developer	8	1	Developing bias voltage check	
		25	2	Auto developer adjustment	
	Process	8	2	MC/TC output check (Normal mode)	8-7
			3	MC/TC output check (Photo mode)	
			4	MC/TC output check (Toner save mode)	
			7	Separation charger (SC)	
			9	MC/TC/SC output check	
	SPF	48	3	Paper transport direction magnification ratio adjustment (When the SPF is used in the horizontal direction)	8-7
		51	2	Resist quantity adjustment	8-3
Setting	Specifications	26	1	Option setting	8-7
			6	Destination setting	8-8
	Paper feed section	26	12	Manual copy mode setting	
	Fuser section	26	13	Main motor operation mode setting at warming up	
		43	1	Fuser temperature setting	
			2	Fuser temperature setting (in power save)	
	Process	44	1	Correction mode setting	8-9
Counter	Copy count	22	1	Maintenance counter display	
			2	Maintenance preset counter display	
			5	Total counter display	
			12	Drum counter display	
	Maintenance	20	1	Maintenance counter value reset	
		21	1	Maintenance cycle setting	
	Drum count	24	7	Drum count value reset	
Operation check	General (Aging mode)	7	1	Warm-up time display and aging	8-12
			4	Omitting warm-up	
			6	Intermittent operation aging	
	Paper feed section	30	1	Main body sensor operation check	8-10
			2	Option tray sensor operation check	
	Optical section	1	1	Mirror base scan operation check	
			2	Optical system sensor operation check	
			3	Lens operation check	
			4	Lens operation aging	8-11
		5	3	Copy lamp lighting operation	
	SPF	2	2	SPF sensor operation check	
			3	SPF motor operation check	
			4	SPF paper feed clutch operation check	
			5	SPF resist clutch operation check	
	Operation panel	5	1	LED lighting check	
	Fuser section	5	2	Heater lamp lighting check	
	Process	5	4	Discharge lamp lighting check	
			5	Blank lamp lighting check	
		6	2	Separation pawl auto operation check	
		44	2	Optical system dirt correction reference value display	8-12
			3	Optical system dirt correction voltage correction value display	
			4	Photoconductor drum rotation time display	
	Developer section	10		Toner motor auto operation check	
		25	1	Toner density sensor operation check/toner density monitor	
Trouble cancel		14		Cancel of troubles other than U2	
		16		U2 trouble cancel	

5. Details of simulations

<table>
<tr><th rowspan="2">Purpose/kind</th><th rowspan="2">Section</th><th colspan="3">Contents</th><th rowspan="2">Ref. page</th></tr>
<tr><th>Main code</th><th>Sub code</th><th>Description</th></tr>
<tr><td rowspan="3">Adjustment</td><td>Paper feed section</td><td>51</td><td>2</td><td>Used to adjust contact pressure between paper and the main body resist roller or the SPF resist roller. (Amount of paper buckle at the resist roller)
Change the set value when the shift between the paper and the image varies.

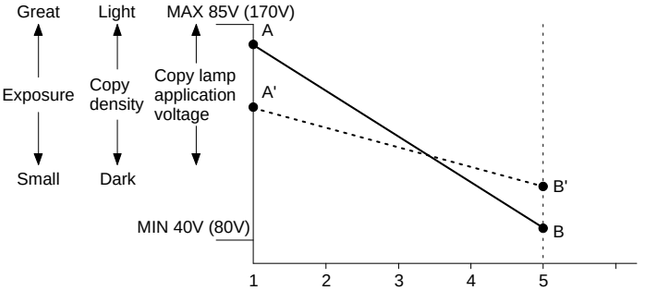
(Operation/procedure)
When the simulation key operation is performed, the currently set value is displayed on the COPIES SELECTED display.
Enter the set value with the numeral key and press the print button, and the entered set value will be stored in the main PWB RAM.
The standard set value is 25. (Main body) 25 (SPF)
Tray paper feed mode: Tray (upper) paper feed lamp ON
Manual paper feed mode: Manual paper feed lamp ON
SPF mode: Upper and lower cassette paper feed lamps ON
The set value corresponds to the time interval between when the paper detector (PPD/SPPD) in front of the main body resist roller detects paper and when the transport roller (TRC/SPFC) turns off.
The greater this time interval is, the greater the contact pressure between the paper and the resist roller is.
 

@ The time interval can be set. The greater the time interval is, the greater the contact pressure between the paper and the resist roller is. If the contact pressure is too great, a paper jam may occur. If the contact pressure is too small, variations of image position for the copy paper becomes greater. This must be adjusted according to the paper quality.</td><td></td></tr>
<tr><td>Optical unit</td><td>26</td><td>8</td><td>Used to adjust the copy magnification ratio in zoom copy.
The lens shift amount in zoom copy is changed to provide suitable magnification ratio.
There is a slight variation in each lens focal distance. If the lenses are shifted in a same amount in zoom copy, suitable magnification ratio may not be obtained. To correct this, therefore, each lens is shifted according to its focal distance.
The lens must be shifted in accordance with its focal distance in zoom copy,

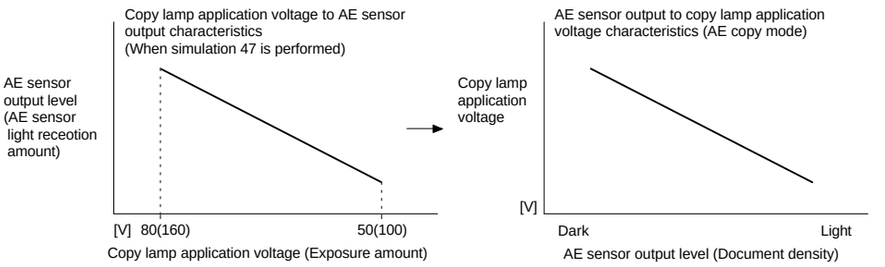
(Operation/Procedure)
When the simulation key operation is performed, the currently set lens number is displayed.
Enter the lens number with the ready lamp ON and press the print button, and the entered number will be stored in the main PWB RAM. The lens number is in proportion to the lens focal distance.</td><td>7-16</td></tr>
<tr><td></td><td>45</td><td>1</td><td>Used to adjust the copy paper lead edge void and the rear edge void amount.

(Operation/procedure)
When the simulation key operation is performed, warming-up operation is performed. After completion of warming up, the currently set void amount is displayed on the COPIES MADE display.
Use the tray select key to select between the lead edge void amount adjustment and the rear edge void amount adjustment mode. The upper tray lamp will change as shown in the table below.
<table><tr><th>Mode</th><th>Paper cassette lamp</th><th>Manual Paper feed lamp</th></tr><tr><td>Lead edge void amount adjustment mode</td><td>Light</td><td>—</td></tr><tr><td>Read edge void amount adjustment mode (Paper cassette)</td><td>Blink</td><td>—</td></tr><tr><td>Read edge void amount adjustment mode (Manual Paper feed)</td><td>—</td><td>Blink</td></tr></table>
Enter the set value with the numeral keys and press the PRINT button, and the set value will be stored.
The standard set value is 50. The void area increases 0.123mm for an increase of the set value by 1.</td><td>7-19</td></tr>
</table>

<table>
<tr><th rowspan="2">Purpose/kind</th><th rowspan="2">Section</th><th colspan="3">Contents</th><th rowspan="2">Ref. page</th></tr>
<tr><th>Main code</th><th>Sub code</th><th>Description</th></tr>
<tr><td rowspan="2">Adjustment</td><td rowspan="2">Optical unit</td><td>46</td><td>1</td><td>Used to adjust the copy density (exposure level) and the copy density gradient (exposure gradient) in each copy mode.
The exposure level is changed by changing the copy lamp applying voltage.
The adjustment points are exposure levels "1" and "5" in each copy mode. The copy density (exposure level) and the copy density gradient (exposure gradient) can be adjusted arbitrarily.

(Operation/procedure)
When the simulation key operation is performed, the currently set exposure level will be displayed on the COPIES SELECTED display.
Select exposure level "1" or "5" with the copy density adjustment key, and enter the set value with the numeral keys and press the print button. Then the set value is stored.
To select each copy mode, use the copy mode key.
<table><tr><th colspan="3">Copy density adjustment mode</th><th colspan="2">Exposure level</th><th>Sim No</th></tr><tr><td rowspan="5">Original table copy mode</td><td rowspan="2">Normal mode</td><td>Non-toner-save mode</td><td>1</td><td>5</td><td rowspan="5">46-1</td></tr><tr><td>Toner save mode</td><td>1</td><td>5</td></tr><tr><td>Photo mode</td><td>Non-toner-save mode</td><td>1</td><td>5</td></tr><tr><td rowspan="2">Auto mode</td><td>Non-toner-save mode</td><td>1</td><td>5</td></tr><tr><td>Toner save mode</td><td>1</td><td>5</td></tr><tr><td rowspan="5">SPF copy mode</td><td rowspan="2">Normal mode</td><td>Non-toner-save mode</td><td colspan="2" rowspan="5">Set to the copy mode in the original table copy mode.</td><td rowspan="5">51-6</td></tr><tr><td>Toner save mode</td></tr><tr><td>Photo mode</td><td>Non-toner-save mode</td></tr><tr><td>Auto mode</td><td>Non-toner-save mode</td></tr><tr><td>Toner save mode</td></tr></table>Copy density level (exposure level (copy lamp applying voltage) to operation panel density display level)
 
( ): 200V system Density display level in the operation panel

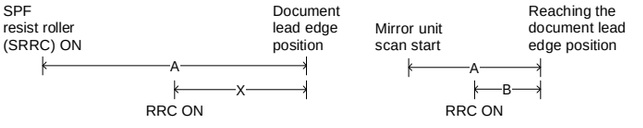
In the manual copy mode and the photo copy mode
Set point A (exposure level (copy lamp applying voltage) at copy density level "1") and point B (exposure level (copy lamp applying voltage) at copy density level "5"), and the exposure gradient (copy density gradient) and the exposure level (copy density level) will be set.
A – B characteristic: A great exposure gradient (copy density gradient).
A′ – B′ characteristic: A small exposure gradient (copy density gradient).
Point A and point B can be set arbitrarily.</td><td>7-26</td></tr>
<tr><td>51</td><td>6</td><td>Used to set the correction value of the copy lamp voltage when the SPF is used.
In copying with the SPF, the exposure level varies more than in the normal copying. To compensate this, the copy lamp voltage is corrected by this simulation.
(Operation/procedure)
When the simulation key operation is performed, the currently set correction value will be displayed on the COPIES SELECTED display.</td><td>7-28</td></tr>
</table>

Purpose/kind	Section	Contents			Ref. page
		Main code	Sub code	Description	
Adjustment	Optical unit	47		Used to store the characteristics of the AE sensor and the optical section for the change in the copy lamp applying voltage. The exposure level in the auto copy mode is automatically determined by the stored data and the document density. This simulation is used to correct the output characteristics of the AE sensor output characteristics, which differ in different machines.	7-26
					
				(Operation/procedure) When the simulation key operation is performed, the scanner unit performs initializing and feeds about 10cm and stops. When the print button is pressed again, the copy lamp applying voltage changes from 80V (160V) to 50V (100V) by the increment of 5V. The AE sensor output characteristics at that time are stored in the main PWB RAM. At that time, the AE sensor gain is automatically adjusted. This operation must be performed before the copy density adjustment in the auto copy mode.	
		48	1	Used to adjust the vertical (Machine front to rear) copy magnification ratio. The adjustment is performed by changing the lens home position arbitrarily.	7-15
				(Operation/procedure) When the simulation key operation is performed, the currently set value is displayed on the COPIES SELECTED display. Enter the adjustment value with the numeric key and press the print button, and the value will be stored in the main PWB RAM. It is required to make a copy and adjust. However, the rough input value can be obtained from the following formula: Input value = Current set value + Magnification ratio correction rate × 10	
			2	Used to adjust the horizontal magnification ratio.(Lead to Trail) The adjustment is performed by changing the scanning speed of the scanner (mirror motor). (Operation/procedure) When the simulation key operation is performed, the currently set value is displayed on the COPIES SELECTED display. Enter the adjustment value with the numeric key and press the print button, and the value will be stored in the main PWB RAM. It is required to make a copy and adjust. However, the rough input value can be obtained from the following formula: Input value = Currently set value + copy magnification ratio x 10 Copy magnification ratio = (Document length – Copy image length) ÷ Document length x 100 [%]	7-167

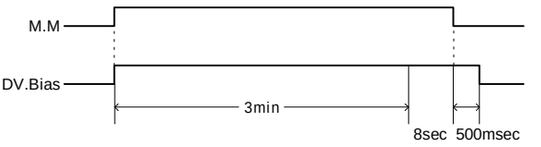
<table>
<tr><th rowspan="2">Purpose/kind</th><th rowspan="2">Section</th><th colspan="3">Contents</th><th rowspan="2">Ref. page</th></tr>
<tr><th>Main code</th><th>Sub code</th><th>Description</th></tr>
<tr><td rowspan="3">Adjustment</td><td>Optical unit</td><td>50</td><td>1</td><td>Used to adjust the copy image position on the copy paper. (Zoom, SPF machine)

(Operation/procedure)
The adjustment is performed by changing the three set values A, B, and C.
The zoom machine has two set values, the SPF machine three, but the normal machine only one.
When the simulation key operation is performed, warming-up is performed and the ready lamp is lighted. Then the currently set value is displayed on the COPIES SELECTED display. In the case of the zoom machine, there are three set values. Every time when the tray select key is pressed, set values A, B, and C is displayed in turn. In this case, the pause lamp status allows monitoring the three set values.

<table><tr><th>Display lamp</th><th>Set value</th></tr><tr><td>Copier tray cassette paper feed lamp BLINKS.</td><td>B (Only in the zoom machine).</td></tr><tr><td>Tray cassette paper feed lamp ON</td><td>A</td></tr><tr><td>Copier tray cassette/option tray cassette paper feed lamps ON</td><td>C (Only in the zoom machine)</td></tr></table>
Set all three set values A, B, and C to "0", make copies at 64% and 129% and measure the shift between the copy paper lead edge and the copy image. Put the measure values into the following formulas to obtain the rough values of A and B.
L1 = Shift between 129% copy paper lead edge and copy image (mm)
L2 = Shift between 64% copy paper lead edge and copy image (mm)
L3 = Shift between SPF mode 10% copy paper lead edge and copy image (mm) (Only in the SPF model)
A = 8.2423 x (L1 – L2)
It corresponds to the time required for the scanner to reach the document lead edge image position from starting scanning.
It is, in other word, the value used to determine the optical position of the document lead edge reference position of the document table, and must be fitted to the edge section of the document reference plate.
If this value is not proper, the distance between the copy image lead edge and the purpose edge is varied when the copy magnification ration is varied.
B = 16.0568 x L2 – 7.9661 x L1 (Only in the zoom model)
It corresponds to the timer required for the resist roller (RRC) to turn on from when the scanner started scanning and reached the optical document lead edge reference position.
This set value is used to determine the paper feed timing for the image position on the OPC drum, and the relationship between the paper and the image is changed.
C = 8.0906 x L3 (timer value) (Only in the SPF machines)
This set value is used to change the paper feed timing for the scanning start timing (the image position on the OPC drum), and to change the relationship between the paper and the image position.

In the non zoom model only set value "A"</td><td>7-19</td></tr>
<tr><td>Developer unit</td><td>8</td><td>1</td><td>Used to check the developing bias voltage.
(Operation/procedure)
The developing bias voltage is outputted for 30 sec.</td><td>7-30</td></tr>
<tr><td></td><td>25</td><td>2</td><td>Used for initial setting of toner density when replacing developer.</td><td>4-5</td></tr>
</table>

<table>
<tr><th rowspan="2">Purpose/kind</th><th rowspan="2">Section</th><th colspan="3">Contents</th><th rowspan="2">Ref. page</th></tr>
<tr><th>Main code</th><th>Sub code</th><th>Description</th></tr>
<tr><td rowspan="15">Adjustment</td><td>Developer unit</td><td>25</td><td>2</td><td>(Operation/procedure)
After 3 minutes from start of stirring of the DV unit after the main motor rotation, toner density is sampled 16 times during 8 sec, and the average value is stored as the toner density reference value in the RAM.
With this reference value as the threshold value, the toner density is controlled.
 

(Note) Do not perform this simulation except for when replacing the developer with a new one.
If this simulation is performed in the other case, overtoning or undertoning may occur, resulting in a poor copy quality.</td><td>4-5</td></tr>
<tr><td rowspan="10">Process</td><td rowspan="2">8</td><td rowspan="2">2</td><td>Used to check the voltage of the main charger and the transfer charger in the manual and auto copy mode.</td><td rowspan="2"></td></tr>
<tr><td>The main charger and the transfer charger unit are turned on for 30 sec in the manual and auto copy mode.</td></tr>
<tr><td rowspan="2">3</td><td>Used to check the voltage of the main charger and the transfer charger in the photo copy mode.</td><td rowspan="2"></td></tr>
<tr><td>The main charger and the transfer charger unit are turned on for 30 sec in the photo copy mode.</td></tr>
<tr><td rowspan="2">4</td><td>Used to check the voltage of the main charger and the transfer charger in the manual and auto copy mode..</td><td rowspan="2"></td></tr>
<tr><td>The main charger and the transfer charger unit are turned on for 30 sec in the toner save mode. (manual and auto copy mode)</td></tr>
<tr><td rowspan="2">7</td><td>Used to check the separation charger voltage.</td><td rowspan="2">7-30</td></tr>
<tr><td>The separation charger unit is turned on for 30 sec.</td></tr>
<tr><td rowspan="2">9</td><td>Used to check the voltage of the main charger, the transfer charger, and the separation charger.</td><td rowspan="2"></td></tr>
<tr><td>The main charger unit, the transfer charger unit, and the separation charger unit are turned ON for 30 sec.</td></tr>
<tr><td>SPF unit</td><td>48</td><td>3</td><td>Used to adjust the horizontal magnification ratio. (When the SPF is used.)
The adjustment is performed by changing the SPF scan speed (SPF motor).</td><td>7-18</td></tr>
<tr><td></td><td></td><td></td><td>(Operation/procedure)
When the simulation key operation is performed, the currently set value is displayed on the COPIES SELECTED display.
Enter the adjustment value with the numeric key and press the print button, and the value will be stored in the main PWB RAM.
It is required to make a copy and adjust. However, the rough input value can be obtained from the following formula:
Input value = Currently set value + Copy magnification ratio x 10
Copy magnification correction rate = (Document length – Copy image length) ÷ Document length x 100 [%]</td><td></td></tr>
<tr><td>Setting</td><td>Specifications</td><td>26</td><td>1</td><td>Used to set options.
(Operation/procedure)
When the simulation key operation is performed, the currently set machine number is displayed on the COPIES SELECTED display.
Enter the code number corresponding to the machine conditions and press the print button, and the value will be set.
<table><tr><th>SF2014/2114</th><th>SF2214 (SPF)</th></tr><tr><td>00</td><td>01</td></tr></table>
The code corresponding to the above is set.
(Note) Enter the code corresponding to the installed option. If a wrong code is entered, a trouble may occur. (Refer to the self diag.)</td><td></td></tr>
</table>

<table>
<tr><th rowspan="2">Purpose/kind</th><th rowspan="2">Section</th><th colspan="3">Contents</th><th rowspan="2">Ref. page</th></tr>
<tr><th>Main code</th><th>Sub code</th><th>Description</th></tr>
<tr><td rowspan="6">Setting</td><td>Specifications</td><td>26</td><td>6</td><td>Used to set the destination.

(Operation/procedure)
When the simulation key operation is performed, the code number of the currently set destination is displayed.
Enter the code number corresponding to the desired destination and press the print button, and the specifications for the destination will be set.
<table><tr><th colspan="2">Code number</th><th rowspan="2">Destination</th></tr><tr><th>Normal machine</th><th>Zoom machine</th></tr><tr><td>4</td><td>14</td><td>Japan</td></tr><tr><td>1</td><td>11</td><td>U.K.</td></tr><tr><td>5</td><td>15</td><td>AB series other than U.K.</td></tr><tr><td>6</td><td>16</td><td>USA</td></tr><tr><td>7</td><td>17</td><td>Inch series other than USA</td></tr><tr><td>25</td><td>35</td><td>Indonesia</td></tr></table></td><td></td></tr>
<tr><td>Paper feed unit</td><td>26</td><td>12</td><td>Used to set the manual paper feed mode. (SF-2014 only)
There are two operation modes: auto and manual. Either of the two can be set.

(Operation/procedure)
When the simulation key operation is performed, the code number of the currently set operation mode is displayed.
Enter the code number corresponding to the desired operation mode and press the print button, and the operation mode will be set.
<table><tr><th>Code number</th><th>Operation mode</th><th>Operation</th></tr><tr><td>1</td><td>Manual</td><td>When the print button is pressed, copying is started.</td></tr><tr><td>0</td><td>Auto</td><td>When copy paper is set, coping is automatically started.</td></tr></table></td><td></td></tr>
<tr><td rowspan="3">Fuser unit</td><td>26</td><td>13</td><td>Used to set the operation mode of the main motor in warming up.
There are two operation modes: auto and manual. Either of the two can be set.

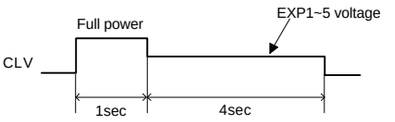
(Operation/procedure)
When the simulation key operation is performed, the code number of the currently set operation mode is displayed.
Enter the code number corresponding to the desired operation mode and press the print button, and the operation mode will be set.
<table><tr><th>Code number</th><th>Operation mode</th><th>Operation</th></tr><tr><td>0</td><td>Normal mode</td><td>The main motor rotates until the process cleaning is completed.</td></tr><tr><td>1</td><td>Long mode</td><td>The main motor keeps rotating until completion of warming up.</td></tr></table></td><td></td></tr>
<tr><td rowspan="2">43</td><td>1</td><td>Used to set the fusing temperature.

(Operation/procedure)
When the simulation key operation is performed, the lower two digits of the currently set temperature is displayed on the COPIES SELECTED display.
(Example: 75 ——— 175 ˚C)
Pressing the paper select key under that state allows selection of fusing temperature by the increment of 5 ˚C. To set the temperature, press the print button. (Standard set value: 85 ——— 185˚C)</td><td></td></tr>
<tr><td>2</td><td>Used to set the fusing temperature in the power save mode.

(Operation/procedure)
When the simulation key operation is performed, the lower two digits of the currently set temperature is displayed on the COPIES SELECTED display.
Pressing the paper select key under that state allows selection of fusing temperature by the increment of 5 ˚C. To set the temperature, press the print button.
* 00 → 05 → 10 → 85 → 90 → 95 * : Standard set value</td><td></td></tr>
</table>

<table>
<tr><th rowspan="2">Purpose/kind</th><th rowspan="2">Section</th><th colspan="3">Contents</th><th rowspan="2">Ref. page</th></tr>
<tr><th>Main code</th><th>Sub code</th><th>Description</th></tr>
<tr><td>Setting</td><td>Process</td><td>44</td><td>1</td><td>Used to set the correction modes.
(Operation/procedure)
When the simulation key operation is performed, the code number of the currently set mode is displayed on the COPIES SELECTED display. Enter the code number corresponding to the desired correction mode and press the print button, and the mode will be set.
<table><tr><th>Code</th><th>Correction mode</th></tr><tr><td>2</td><td>Optical system dirt correction enable</td></tr><tr><td>4</td><td>Photoconductor drum membrane wear correction enable</td></tr></table>Set the total of codes of above modes.
Factory setting is "6."</td><td></td></tr>
<tr><td rowspan="6">Counter</td><td rowspan="4">Copy count</td><td rowspan="4">22</td><td>1</td><td>Used to check the maintenance count value.
(The count value of the installed DV unit is displayed.)
(Operation/procedure)
The maintenance count value is displayed dividedly by two digits three times on the COPIES SELECTED display.
There is a pause between any two displays. After the longest pause, the top two digits are displayed.</td><td></td></tr>
<tr><td>2</td><td>Used to check the set maintenance cycle (maintenance preset counter).
(Operation/procedure)
The currently set maintenance cycle value is displayed dividedly by 2 digits three times on the COPIES SELECTED display.
There is a pause between any two displays. After the longest pause, the top two digits are displayed.</td><td></td></tr>
<tr><td>5</td><td>Used to check the total count value.
(Operation/procedure)
The total count value is displayed dividedly by 2 digits three times on the COPIES SELECTED display.
There is a pause between any two displays. After the longest pause, the top two digits are displayed.</td><td></td></tr>
<tr><td>12</td><td>Used to check the drum counter value inside the installed OPC drum unit.</td><td></td></tr>
<tr><td rowspan="2">Maintenance</td><td>20</td><td>1</td><td>Used to reset the maintenance counter.</td><td></td></tr>
<tr><td>21</td><td>1</td><td>Used to set the maintenance cycle.
(Operation/procedure)
After performing the simulation key operation, enter the code number corresponding to the desired maintenance cycle listed below.
<table><tr><th>Code No.</th><th>Maintenance lamp ON cycle</th><th>Photoconductor lamp ON cycle</th></tr><tr><td>1</td><td>Every 10,000 copies</td><td>Every 40,000 copies</td></tr><tr><td>2</td><td>Every 20,000 copies</td><td>Every 40,000 copies</td></tr><tr><td>3</td><td>Every 40,000 copies</td><td>Every 40,000 copies</td></tr><tr><td>4</td><td>Lamp not ON</td><td>Lamp not ON</td></tr></table>Set to "2" when shipping.</td><td></td></tr>
<tr><td>Drum count</td><td>24</td><td>7</td><td>Drum count data is reset.</td><td></td></tr>
</table>

<table>
<tr><th rowspan="2">Purpose/kind</th><th rowspan="2">Section</th><th colspan="3">Contents</th><th rowspan="2">Ref. page</th></tr>
<tr><th>Main code</th><th>Sub code</th><th>Description</th></tr>
<tr><td rowspan="5">Operation check</td><td rowspan="3">Paper feed unit</td><td rowspan="3">30</td><td>1</td><td>Used to check the operations of the sensors and detectors in the paper feed section, and their related circuits.
The operations of the sensors and the detector in the paper feed section can be monitored by the lamps on the operation panel.
(Operation/procedure)
ON/OFF of the sensors and detectors in the paper feed section can be monitored with the lamps on the operation panel.
<table><tr><th>Sensor name</th><th>Display lamp</th></tr><tr><td>Paper size detector (PWD)</td><td>Toner empty lamp</td></tr><tr><td>Resist detector (PPD)</td><td>Jam lamp</td></tr><tr><td>Paper exit detector (POD)</td><td>OPC drum lamp</td></tr><tr><td>Tray open/close detector (PED1)</td><td>No.1 paper feed cassette lamp</td></tr><tr><td>Manual paper feed detector (PID)</td><td>Manual paper feed lamp</td></tr></table></td><td>3-4</td></tr>
<tr><td>2</td><td>Used to check the operations of the sensors and detectors in the option tray and their related circuits.
The operations of the sensors and detectors in the option tray can be monitored with the display lamps on the operation panel.
(Operation/procedure)
ON/OFF of the sensors and detectors in the option tray can be monitored with the lamps on the operation panel.
The operations of the sensors and detectors in the option tray can be monitored with the lamps on the operation panel. Used to check the operations of the sensors.
<table><tr><th>Sensor name</th><th>Display lamp</th></tr><tr><td>Option tray cover open/close detector (CSDSW)</td><td>Toner empty lamp</td></tr><tr><td>Option tray paper feed sensor (CSPPD)</td><td>Jam lamp</td></tr><tr><td>Option tray open/close detector (CPED2)</td><td>Upper tray lamp</td></tr><tr><td>Option tray detector (OCSD)</td><td>Lower tray lamp</td></tr><tr><td>Mult manual paper feed unit defects</td><td>SPF Jam lamp</td></tr><tr><td>Single manual paper feed unit defects</td><td>SPF lamp</td></tr></table></td><td></td></tr>
<tr><td rowspan="3">Optical unit</td><td rowspan="3">1</td><td>1</td><td>Used to check the operation of the scanner unit and its control circuit.
(Operation/procedure)
When the print button is pressed, scanning is performed at the speed corresponding to the currently set copy magnification ratio.
The copy magnification ratio can be set arbitrarily.</td><td></td></tr>
<tr><td>2</td><td>Used to check the operations of the sensors and detectors in the optical unit and their related circuits.
(Operation/procedure)
ON/OFF of the sensors and detectors in the optical unit can be monitored with the lamps on the operation panel.
<table><tr><th>Sensor name</th><th>Display lamp</th></tr><tr><td>Mirror home position sensor (MHPS)</td><td>OPC drum lamp</td></tr><tr><td>Lens home position sensor (LHPS)</td><td>Toner empty lamp</td></tr></table></td><td>3-4</td></tr>
<tr><td>3</td><td>Used to check the operation of the lens unit and its control circuit.
(Operation/procedure)
The lens unit moves to each position of the following copy magnification ratios continuously, and stops at each position for about 0.5 sec.
The copy magnification ratio corresponding to each stop position of the lens is displayed on the operation panel.
10% → Reduction 1 → Reduction 2 → Enlargement 1 → Enlargement 2 → 100%</td><td></td></tr>
</table>

<table>
<tr><th rowspan="2">Purpose/kind</th><th rowspan="2">Section</th><th colspan="3">Contents</th><th rowspan="2">Ref. page</th></tr>
<tr><th>Main code</th><th>Sub code</th><th>Description</th></tr>
<tr><td rowspan="14">Operation check</td><td rowspan="3">Optical unit</td><td rowspan="2">1</td><td rowspan="2">4</td><td>Used to check the operation of the optical unit and its control circuit.</td><td rowspan="2"></td></tr>
<tr><td>(Operation/procedure)
The operation of simulation 1-3 is repeatedly performed.</td></tr>
<tr><td rowspan="2">5</td><td rowspan="2">3</td><td>Used to check the operation of the copy lamp and its control circuit.</td><td rowspan="2"></td></tr>
<tr><td>(Operation/procedure)
The copy lamp lights up for first one sec at full power, and lights for 4 sec at the currently set exposer level (copy density).
 
</td></tr>
<tr><td rowspan="8">SPF unit</td><td rowspan="4">2</td><td rowspan="2">2</td><td>Used to check the operation of the sensors and detectors in the SPF unit.</td><td rowspan="2">3-4</td></tr>
<tr><td>(Operation/procedure)
ON/OFF of the sensors and detectors in the SPF unit can be monitored with the lamps on the operation panel.
<table><tr><th>Sensor name</th><th>Display lamp</th></tr><tr><td>Document detector (SPFD)</td><td>Toner empty lamp</td></tr><tr><td>SPF resist sensor (SPPD)</td><td>Jam lamp</td></tr><tr><td>Document exit sensor (SPOD)</td><td>OPC drum lamp</td></tr><tr><td>SPF open/close detector (SDSW)</td><td>SPF jam lamp</td></tr></table></td></tr>
<tr><td rowspan="2">3</td><td>Used to check the operation of the SPF drive motor and its control circuit.</td><td rowspan="2"></td></tr>
<tr><td>(Operation/procedure)
The SPF drive motor rotates for 10 sec at the speed corresponding to the currently set copy magnification ratio.</td></tr>
<tr><td rowspan="2">4</td><td>Used to check the operation of the SPF paper feed clutch and its control circuit.</td><td rowspan="2"></td></tr>
<tr><td>(Operation/procedure)
The SPF paper feed clutch turns on for 10 sec.</td></tr>
<tr><td rowspan="2">5</td><td>Used to check the operation of the SPF resist clutch and its control circuit.</td><td rowspan="2"></td></tr>
<tr><td>(Operation/procedure)
The SPF resist clutch turns on for 10 sec.</td></tr>
<tr><td rowspan="2">Operation unit</td><td rowspan="2">5</td><td rowspan="2">1</td><td>Used to check the operations of the lamps on the operations panel and their control circuits.</td><td></td></tr>
<tr><td>(Operation/procedure)
All display lamps on the operation panel turns on for 5 sec.</td><td></td></tr>
<tr><td rowspan="2">Fuser unit</td><td rowspan="2">5</td><td rowspan="2">2</td><td>Used to check the operation of the heater lamp and its control circuit.</td><td></td></tr>
<tr><td>(Operation/procedure)
The heater lamp turns on for 500ms, and off for 500ms five times repeatedly.</td><td></td></tr>
<tr><td rowspan="4">Process</td><td rowspan="4">5</td><td rowspan="2">4</td><td>Used to check the operation of the discharge lamp and its control circuit.</td><td rowspan="2"></td></tr>
<tr><td>(Operation/procedure)
The discharge lamp lights up for 30 sec.</td></tr>
<tr><td rowspan="2">5</td><td>Used to check the operation of the blank lamp and its control circuit.</td><td></td></tr>
<tr><td>(Operation/procedure)
The blank lamps lights up sequentially from the rear frame side to the front frame side, and all the lamps light up for 10 sec.</td><td></td></tr>
<tr><td>Operation check</td><td>6</td><td>2</td><td>Used to check the operation of the OPC separation pawl solenoid and its control circuit.
(Operation/procedure)
The OPC separation pawl solenoid repeats 0.5 sec ON and 0.5 sec OFF twenty times.</td><td></td></tr>
</table>

Purpose/kind	Section	Contents			Ref. page
		Main code	Sub code	Description	
Operation check	Process	44	2	Used to display the reference value of the optical system dirt correction. This value affects the process correction system. For details, refer to the descriptions on the process correction system.	5-5 5-13
			3	Used to display the reference value of the optical system dirt correction.	5-13
				(Operation/procedure) When the simulation key operation is performed, the current correction amount is displayed in hexadecimal number on the COPIES SELECTED display. The decimal number converted from the hexadecimal number shows the actually corrected copy lamp voltage. Example --- 1d] : 2.9V correction	
			4	Used to display rotating time of the photoconductor drum. This value affects the process correction system. For details, refer to the descriptions on the process correction system.	5-12
				(Operation/procedure) When the simulation key operation is performed, the current rotating time of the photoconductor drum is displayed in the unit of minute on the COPIES SELECTED display.	
	Developer unit	10		Used to check the operation of the toner motor and its control circuit.	
				(Operation/procedure) The toner motor turns on for 30 sec.	
		25	1	Used to check the operation of the sections other than the optical unit and to check the operation of the toner density sensor.	
				(Operation/procedure) The main motor rotates and the units connected to the main motor operate accordingly. The output level of the toner density sensor is displayed on the COPIES SELECTED display.	
Operation check	Gereral (Aging mode)	7	1	Warm-up time display and aging When this simulation is executed, warm-up is started, and the warm-up time is counted every second and displayed on the copy quantity display. At completion of warm-up, counting is stopped and RPL is lighted. Press CA key to clear the warm-up time display, set the desired copy quantity and press the PRINT button, and copying will be performed to make the set quantity of copies.	
			4	Omitting warm-up When this simulation is executed, the machine goes into the ready state (RPL on).	
			6	Intermittent aging When this simulation is executed, warm-up is started. After completion of warm-up, set the copy quantity and press the PRINT button, and copying will be performed to make the set quantity of copies.	
Trouble code resets		14		Used to cancel troubles other than self diag U2 trouble code.	
				(Operation/procedure) After cancellation of the trouble code, the simulation is also automatically cancelled.	
		16		Used to cancel the self diag U2 trouble code.	
				(Operation/procedure) After cancellation of the trouble code, the simulation is also automatically cancelled.	

6. User simulation

User simulation allows the user to change or cancel the factory settings easily according to his or her desirable operating environment on the following functions.

(1) Functions which can be reset or canceled by User simulation.

Auto clear function: Time for returnign to the standard state can be changed or canceled. (Standard state: copy quantity "0," 100% AE mode)

Pre-heating function (Power saving): Time to enter the pre-heat mode and the auto power shut-off mode can be changed or canceled. (Refer to [1]-4 New functions, page 1-1.)

Stream feeding mode: When set to this mode, the document feed lamp blinks for about 5 sec after copying with the SPF. If a document is set again, copying is started automatically.

(2) User simulation prcedure

Simulation procedure	State	Paper jam/ photoconductor/ toner supply warning LED	Copy quantity display	Print LED
1. Press the paper feed section select key for more than 5 sec.	User simulation input allowed.	Blink	– –	OFF
2. Enter a code number with 10 key.	Simulation code selection.	Blink	1 –	ON
3. Press the COPY button.	Simulation code determined.	Blink	1 1	ON
4. Enter the selection code with 10 key.	Simulation code menu selection.	Blink	1 2	ON
5. Press the COPY button.	Simulation code menu determined.	Blink	1 2	OFF
6. Press the paper feed section select key.	Escape from user simulation.	OFF	Returns to copy quantity display.	—
* Press the clear key.	• When this key is pressed during user simulation selection, the mode returns to state 1 (user simulation input allowed.) (Use this key to correct mistyping of input.) • After completion of program setting, when this key is pressed, the mode the following program input can be made.	Blink		OFF

(: Blink)

(3) User simulation code table

Program	Sim code	Selection code: setting content	Factory setting
Auto clear time setting	⌈1⌋	⌈0⌋: OFF ⌈1⌋: 30 sec. ⌈2⌋: 60 sec. ⌈3⌋: 90 sec. ⌈4⌋: 120 sec.	F
Pre-heat mode setting and time setting	⌈2⌋	⌈0⌋: OFF ⌈1⌋: 30 sec. ⌈2⌋: 60 sec. ⌈3⌋: 90 sec. ⌈4⌋: 120 sec.	F

Program	Sim code	Selection code: setting content	Factory setting
Auto shut-off mode setting and time setting	⌈3⌋	⌈0⌋: OFF ⌈1⌋: 2 min. ⌈2⌋: 3 min. ⌈3⌋: 5 min. ⌈4⌋: 10 min. ⌈5⌋: 15 min.	F
Stream feeding mode setting and time setting (* Machines with SPF installed only.)	⌈4⌋	⌈0⌋: ON ⌈1⌋: OFF	F

[9] SELF DIAG

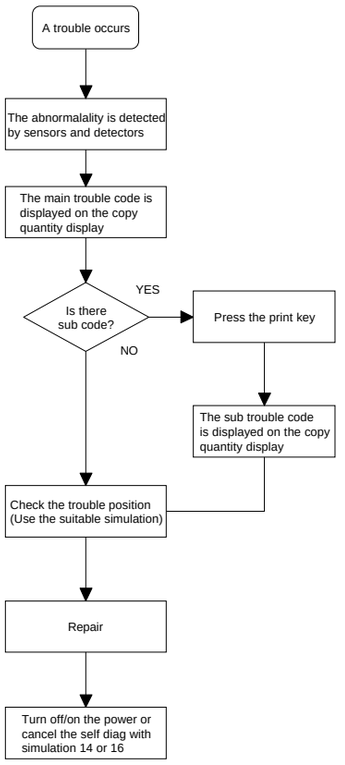
1. Summary/purpose

This model has the self diag function for the following purposes:

1) When a trouble occurs in the machine, the machine detects the trouble and displays the trouble content on the copy quantity display to alert the customer and the serviceman.
2) When any abnormality is detected, the power supply line is cut off immediately for safety and to protect the machine from damage.

2. Operation

The self diag content is displayed in the following procedure.


A trouble occurs
The abnormalality is detected by sensors and detectors
The main trouble code is displayed on the copy quantity display
Is there sub code?
YES
NO
Press the print key
The sub trouble code is displayed on the copy quantity display
Check the trouble position (Use the suitable simulation)
Repair
Turn off/on the power or cancel the self diag with simulation 14 or 16

3. Clearing the self diag display

After repairing the trouble section, clear the self diag display according to the table below:
Clearing the self diag display

Self diag display	Display clearing procedure
L1, L3, L4, L5, L8	Turn off/on the power.
H3, H4	Execute simulation 14.
U2	Execute simulation 16.
CH, PC	When the trouble is cancelled,, the display is cleared.

4. Self diag contents

Error code		Item	Description	Ref. page
Main	Sub			
L1	0	Content	Scanner feed trouble	8-10
		Detail	1) 86 pulses (45 mm) of the scanner motor drive pulse have been outputted after the scanner unit started scanning, but the scanner home position sensor (MHPS) does not turn off. 2) The scanner unit is not at its home position (MHPS does not turn on) when the scanner unit starts scanning. 3) The scanner home position sensor (MHPS) does not turn on when the scanner performs the initial operation.	
		Cause	1) Scanner motor trouble 2) Scanner motor control circuit trouble 3) Scanner motor rotation sensor and its control circuit trouble 4) Scanner home position sensor (MHPS)and its input circuit trouble (main control circuit trouble) 5) Scanner unit drive mechanism trouble 6) An overload to the drive section	
		Remedy	Use simulations 1-1 and 1-2 to check the following: A. Check the mirror motor control circuit and its peripheral sections. 1) The scanner unit operates normally. 2) The scanner home position sensor ((MHPS) operates normally and its output signal is inputted to the main control PWB. 3) The scanner motor drive signal is outputted. 4) The scanner motor rotation sensor signal is inputted to the control circuit. B. Check the scanner unit drive mechanism. 1) Drive wire 2) Pulley 3) Gear After repair, turn off/on the power switch.	
L3	0	Content	Scanner return trouble	8-10
		Detail	1) The scanner motor drive pulses required for the scanner unit to return are shifted more than 50 pulses for the drive pulses required for feeding. (The corresponding distance is 10mm or more.) 2) The scanner motor drive pulses required for the scanner unit to return are within 50 pulses for the drive pulses required to feed. 3) The scanner unit does not return. Or through it returns, the scanner unit does not return to its home position (the MHPS does not turn on). (Though the scanner motor drive pulses required to return are 50 pulses greater than the drive pulses required for the scanner unit to feed, the scanner unit is not in the home position (the MHPS does not turn on). 4) After the scanner unit returns, the MHPS does not turn on.	
		Cause	1) Scanner motor trouble 2) Scanner motor control circuit trouble 3) Scanner motor rotation sensor and its peripheral sections trouble 4) Scanner home position sensor (MHPS) and its input circuit trouble 5) Scanner unit drive mechanism trouble 6) Overload at the scanner motor drive section	
		Remedy	Use simulation 1-1 and 1-2 to check the following: A. Check the mirror motor control circuit and its peripheral. 1) The scanner unit operates normally. 2) The scanner home position sensor (MHPS) operates normally and its output signal is inputted to the main control circuit. 3) The scanner motor drive signal is inputted. 4) The scanner motor rotation sensor signal is inputted to the control circuit. B. Check the scanner unit drive mechanism. 1) Drive wire 2) Pulley 3) Gear After repair, turn off/on the power switch.	
L4	1	Content	Main motor lock trouble	

Error code		Item	Description	Ref. page
Main	Sub			
L4	1	Detail	The rotary encoder signal cannot be detected for more than 50ms during delivery of the main motor On signal output.	
		Cause	1) Main moor trouble 2) Main control circuit trouble 3) Main motor rotation sensor and its input circuit (main control circuit) trouble 4) Main motor drive mechanism trouble 5) An overload on the main motor drive section	
		Remedy	Check the following items: A. Check the main motor control circuit and its peripheral sections. 1) Main motor drive signal is inputted. 2) The main motor rotation sensor signal is inputted to the control circuit. B. Check the main motor drive mechanism. 1) Drive wire 2) Pulley 3) Gear After repair, turn off/on the power switch.	
L5	2	Content	Lens drive motor trouble	8-10 8-11
		Detail	1) During the initial operation, the lens does not move from the reduction copy position to the enlarged copy position. Or the lens home position sensor (LHPS) does not turn on even though the lens moves (130mm/lens motor drive pulse output). 2) During the initial operation, the lens does not move to the enlargement copy position. Or the lens moves (70mm/ 50 pulses of lens motor drive pulse are outputted) but the lens home position sensor (LHPS) does not turn off. 3) When the lens moves from the reduction coy position to the enlargement copy position, the specified number of pulses required for the lens home position sensor (LHPS) to move from ON position to OFF position is shifted by 20 pulses (4mm) or more. 4) AT the completion of lens movement, the lens home position sensor is not ON when in enlargement copying, or not OFF when in reduction copying.	
		Cause	1) Lens motor trouble 2) Main control circuit trouble 3) Lens motor rotation sensor and its input circuit (main control PWB) trouble 4) Lens motor drive mechanism trouble 5) An overload on lens motor drive mechanism	
		Remedy	Use simulations 1-3 or 1-4 to check the following items: A. Check the lens motor control circuit and its peripheral sections. 1) The lens motor drive signal is outputted. 2) Lens motor rotation sensor signal is inputted to the control circuit. B. Check the lens motor drive mechanism. 1) Drive wire 2) Pulley 3) Gear After repair, turn off/on the power switch.	
L8	1	Content	Power frequency abnormality	
		Detail	The power frequency is shifted from the specified level by 5% or more for 10 cycles or more, or the FW signal cannot be detected for more than 5 sec.	
		Cause	1) FW is not outputted or the output waveform is abnormal. 2) Power circuit trouble (AC power unit/DC power unit) 3) FW input circuit trouble (main control circuit) 4) AC power trouble (waveform/voltage)	
		Remedy	Check the waveforms of the following units with an oscilloscope. 1) FW signal waveform in the DC power unit 2) FW signal waveform in the main control circuit 3) AC power line After repair, turn OFF/ON the power switch.	
	3	Content	During execution of simulation 47, the AE sensor output does not change according to change in the copy lamp voltage.	8-5
		Detail	AE sensor trouble	
		Cause	1) AE sensor or its input circuit (main control PWB) trouble 2) Copy lamp control circuit trouble (copy lamp control signal abnormality) 3) A white paper is not set on the document table or the document table or the document cover is dirty.	

Error code		Item	Description	Ref. page
Main	Sub			
L8	3	Remedy	Check the following items: 1) AE sensor or its input circuit 2) Copy lamp control circuit (copy lamp control signal) After repair, turn off/on the power switch.	
H2	0	Content	Fuser section thermistor trouble	
		Detail	The voltage across the thermistor input circuit remains 4.6V or more for 1500 ms or more.	
		Cause	1) Thermistor and its input circuit (main control PWB) trouble (disconnection)	
		Remedy	Check the thermistor and its input circuit (main control circuit) for disconnection. AFter repair, used simulations 14 to cancel the self diag.	
H3	0	Content	Abnormally high temperature in the fuse section	8-11
		Detail	The voltage across the thermistor input circuit remains 1.39V or less for 1500 ms or more. (A high temperature above 241 C is detected.)	
		CAuse	1) Thermistor and its input circuit (main control PWB) trouble (disconnection) 2) Heater lamp control signal and its control circuit trouble (The heater lamp remains ON.)	
		Remedy	Check the following items: 1) Thermistor and its input circuit (main control PWB) disconnection 2) Heater lamp control signal and its control circuit After repair, use simulations 14 to cancel the self diag.	
H4	0	Content	An abnormally high temperature in the fuse section	8-11
		Detail	1) The voltage across the thermistor input circuit remain 3.39V or more for 1500ms. (A temperature below 148˚C is detected.) 2) The temperature does not reach the specified temperature within 60 sec after starting warming up.	
		Cause	1) Thermistor and its input circuit (main control circuit) trouble (disconnection) 2) Heater lamp trouble 3) Heater lamp control signal and its control circuit trouble (The heater lamp remains ON.)	
		Remedy	Check the following items: 1) Check the thermistor and its input circuit (main control PWB) for disconnection or shot. 2) Heater lamp control signal and its control circuit 3) Heater lamp After repair, use simulations 14 to cancel the self diag.	
U2	1	Content	In the main PWB EEPROM data sum check, the data do not correspond to the CPU data.	8-12
		Cause	1) Main PWB EEPROM trouble 2) Main control circuit trouble 3) Communication line trouble between the main PWB EEPROM and the CPU 4) CPU trouble 5) Data bus line trouble	
		Remedy	Check the following items: 1) main PWB EEPROM 2) Memory control circuit 3) Communication line between main PWB EEPROM and CPU 4) CPU 5) Data bus line After repair, use simulations 16 to cancel the self diag. When the power is turned on, data in the main PWB EEPROM are transferred to the CPU to perform sum check. The operation can be checked at that time.	
	4	Content	memory line communication trouble	8-12
		Detail	1) In access to the main PWB EEPROM, the respond command ACK is not inputted to the CPU. 2) When writing data into the main PWB EEPROM, the write enable signal is not inputted to the CPU for 11ms or more.	
		Cause	1) Main EEPROM RAM trouble 2) Memory control circuit trouble 3) Communication line trouble between main PWB and CPU 4) CPU trouble 5) Data bus line trouble	

Error code		Item	Description	Ref. page
Main	Sub			
U2	4	Remedy	Check the following items: 1) Main PWB EEPROM 2) Memory control circuit 3) Communication line between main PWB EEPROM and CPU 4) CPU 5) Data bus line After repair, use simulation 16 to cancel the self diag When the power is turned on, data communication is performed with the main PWB EEPROM and the CPU. The operation can be checked at that time.	8-12
U5	5	Content	Abnormally high temperature on the original glass when using the SPF.	
		Detail	The thermistor detects 55˚C or above.	
		Cause	1) Thermistor and input circuit (main control PWB) trouble (disconnection) 2) Copy lamp control signal and control circuit trouble (Copy lamp remains ON.)	
		Remedy	Check the following items. 1) Thermistor and input circuit (main control PWB) disconnection 2) Copy lamp control signal and control circuit Turn OFF/ON the power to cancel the diagnostics.	
EE	EU	Content	Toner density initial setting trouble (undertoner)	8-6
		Detail	When setting the toner density initial level with simulation 25-2, the toner density sensor output is below the specified voltage (1.53V).	
		Cause	1) Toner sensor trouble 2) Toner sensor input circuit trouble (main control PWB)	
		Remedy	Use simulations 25-2 to check the following items: 1) Toner sensor 2) Toner sensor input circuit After repair, use simulations 14 to cancel the self diag.	
	EL	Content	Toner density initial setting trouble (overtoner)	8-6
		Detail	When setting the toner density initial level with simulation 25-2, the toner density sensor output is above the specified voltage (3.49V).	
		Cause	1) Toner sensor trouble 2) Toner sensor input circuit trouble (main control circuit) 3) Toner motor and its control circuit trouble	
		Remedy	Use simulations 25-2 to check the following items: 1) Toner sensor 2) Toner sensor input circuit 3) Toner motor and its control circuit After repair, use simulations 14 to cancel the self diag.	
CH	Light	Content	Paper feed section cover open	8-10
		Detail	1) The paper feed section cover open/close detector (CSDSD) and its input circuit remains Low (0V).	
		Cause	1) Paper feed section cover open/close mechanism trouble 2) Paper feed section cover open/close detector signal (CSDSW) and its control circuit trouble 3) Paper feed section cover open/close detector (CSDSW) trouble	
		Remedy	check the following items: 1) Paper feed section cover open/close mechanism 2) Paper feed section cover open/close detector signal (CSDSW) and its input circuit 3) Paper feed section cover open/close detector (CSDSW)	
	Light	Content	Manual paper feed unit installation trouble (MFD0, MFD1)	8-10
		Detail	1) The manual paper feed unit signal (CSDSW) and its control circuit remains MFD0 level and MFD1 level.	
		Cause	1) The manual paper feed unit signal (MFD1) line is not connected or disconnection in the line. (The manual paper feed unit is not installed.)	
		Remedy	Check the following item: 1) Manual paper feed unit signal (MFD1) line	
	Blink	Content	Developer detection trouble	8-6
		Detail	1) The toner density sensor input (main PWB) voltage is below 0.5V.	
		Cause	1) Toner density sensor and its input circuit (main PWB) trouble 2) Developer seal is not removed.	
		Remedy	Use simulation 25-2 to check the following items: 1) Toner density sensor and its control circuit (main PWB) 2) Developer seal	

Error code		Item	Description	Ref. page
Main	Sub			
PC		Content	Personal counter installation trouble	
		Detail	The personal counter is not installed in the personal counter mode. The input circuit of the personal counter installation detect signal does not turn HIGH level.	
		Cause	1) Personal counter trouble 2) Personal counter installation detecting signal input circuit (main PWB) trouble 3) Personal counter wiring	
		Remedy	Check the following items: 1) Personal counter 2) Personal counter installation detecting signal input circuit (main PWB) 3) Personal counter wiring	
Paper empty		Content	Paper tray open/no copy paper	
		Detail	1) The selected paper tray is removed. 2) There is no paper in the selected paper tray.	
		Cause	1) The selected paper tray is removed. 2) There is no paper in the selected paper tray. 3) The selected paper tray detector (CPED1, CPED2) and its input circuit (main PWB) trouble 4) The selected paper tray paper empty detector (CPED1/CPED2) and its input circuit (main PWB)	
		Remedy	Check the following items: 1) The selected paper tray paper empty detector (CPED1/CPED2) and its input circuit (main PWB)	
Toner empty	Light	Content	Toner supply trouble	8-6
		Detail	1) No toner in the toner box 2) Toner supply trouble	
		Cause	1) No toner in the toner box 2) Toner motor and its control circuit (main PWB) trouble 3) Toner supply section clogging 4) Toner sensor and its input circuit (main PWB) trouble	
		Remedy	Use simulation 25-2 to check the following items: 1) Toner box 2) Toner motor and its control circuit (main PWB) 3) Toner supply section 4) Toner sensor and its control circuit (main PWB)	
Toner empty	Blin	Content	Toner density fall	8-12
		Detail	1) No toner in the toner box 2) Toner density falls below the specified level.	
		Cause	1) No toner in the toner box 2) Toner motor and its control circuit (main PWB) trouble 3) Toner supply section clogging 4) Toner sensor and its input circuit (main PWB) trouble	
		Remedy	Check the following items: 1) Toner box 2) Toner motor nd its control circuit (main PWB) 3) Toner supply section 4) Toner sensor and its input circuit (main PWB)	
JAM		Content	Copy paper misfeed trouble	8-3
		Detail	1) Misfeed of copy paper occurs in the copy paper feed section, the transfer section, the transport section, or the fuse section.	
		Cause	1) The copy paper detector in each section remains ON or OFF. 2) The copy paper detector in each section and its input circuit (main PWB) trouble 3) The copy paper feed and transport clutches in each section and its control circuit (main PWB) trouble 4) Paper feed roller and transport roller trouble 5) Copy paper fed and transport drive mechanism trouble (motor, gear, etc.) 6) Insufficient or excessive contact pressure between copy paper and the resist roller because of improper setting with simulation 51-2.	
		Remedy	Check the following items: 1) Copy paper detector in each section 2) Copy paper detector and its input circuit (main PWB) in each section 3) Copy paper feed and transport clutches and their control circuit (main PWB) trouble 4) Paper feed roller, transport roller 5) Copy paper feed and transport drive mechanisms trouble (motor, gear, etc.) 6) Set value of simulation 51-2	

Error code		Item	Description	Ref. page
Main	Sub			
OPC drum replacement	Light	Content	OPC drum replacement timing alarm	8-9
		Detail	OPC drum replacement after copying 2,000 sheets.	
	Blink	Content	OPC drum replacement	
		Detail	OPC drum replacement timing is reached.	
		Cause	The OPC drum unit counter exceeds the specified copy quantity (40K). (Note) The OPC drum counters are in the main PWB RAM and in the OPC drum. The two counters normally coincide each other. If there is any discrepancy between them, the data in the EEPROM in the OPC drum takes priority.	
		Remedy	Replace the OPC drum unit.	
SPFJAM		Content	Document misfeed trouble	8-11
		Detail	1) When the document is in the SPF section, a misfeed of copy paper occurs.	
		Cause	1) The document detector in he SPF section remains ON or OFF. 2) The document detector in the SPF section and its input circuit (main PWB) trouble 3) The paper feed and transport clutches in the SPF section and its control circuit (main PWB) trouble 4) SPF section paper feed roller and transport roller trouble 5) Document paper feed section and its transport drive system trouble (motor, gear, etc.) 6) Insufficient or excessive contact pressure between the SPF resist roller and the document because of improper setting with simulation 51-7	
		Remedy	Use simulation 2 to check the following items: 1) SPF section document detector 2) SPF section document detector and its input circuit (main PWB) 3) SPF section paper feed and transport clutches and their control circuit (main PWB) 4) SPF section paper feed roller, transport roller 5) Document paper feed and transport drive system (motor, gear, etc.) 6) Set value of simulation 51-7	

5. Conditions for the JAM display

1) Paper feed section

(1) The JAM lamp lights up if 9 PPD does not turn on within about 1.5 sec after P CPFC1 ON.

(2) The JAM lamp lights up if H CSPPD does not turn on within about 1.1 sec after Q CPFC2 ON.

(3) The JAM lamp lights up if 9 PPD does not turn on within about 1.1 sec after H CSPPD ON.

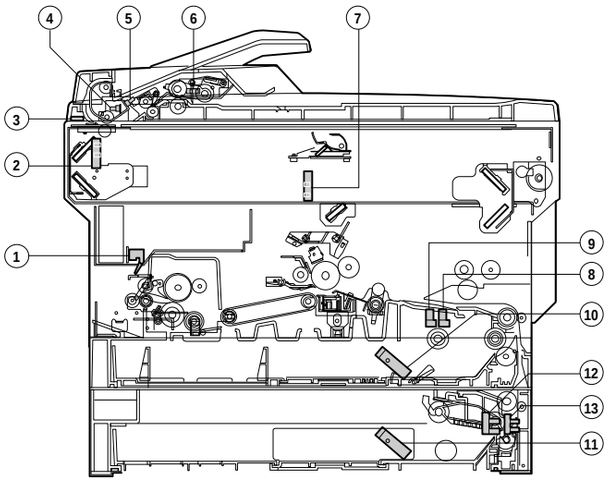
(4) The Jam lamp lights up if 9 PPD does not turn on within about 1.0 sec after R MPFC ON.

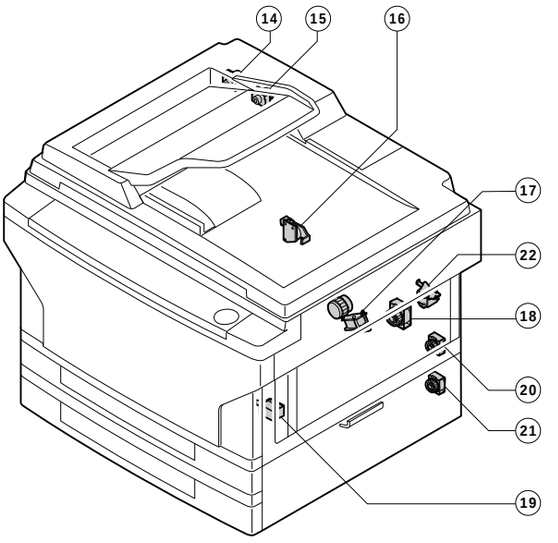
2) Transport section

(1) The JAM lamp lights up if 9 PPD does not turn off within about 3.2 sec after M RRC ON.

(2) The JAM lamp lights up if 1 POD does not turn off within about 2.8 sec after 9 PPD ON.

(3) The JAM lamp lights up if 1 POD does not turn on within about 2.4 sec after M RRC ON.





[10] SERVICING AT MEMORY TROUBLE AND MAIN CONTROL PWB REPLACEMENT

1. General

The EEPROM in the control PWB and the EEPROM in the OPC drum unit are storing various set values, adjustment values, and counter values.
These data are very important and used for operating the machine properly and for service control.
In the following cases, therefore, various set values, adjustment values and counter values must be set again.

@ When a memory trouble (U2) occurs.

@ When the EEPROM in the main control PWB is replaced.

@ When the EEPROM in the OPC drum unit is replaced.

@ When the main control PWB is replaced.

When "U2" trouble occurs, the data cannot be relied upon, and they must be set properly.

2. Purpose

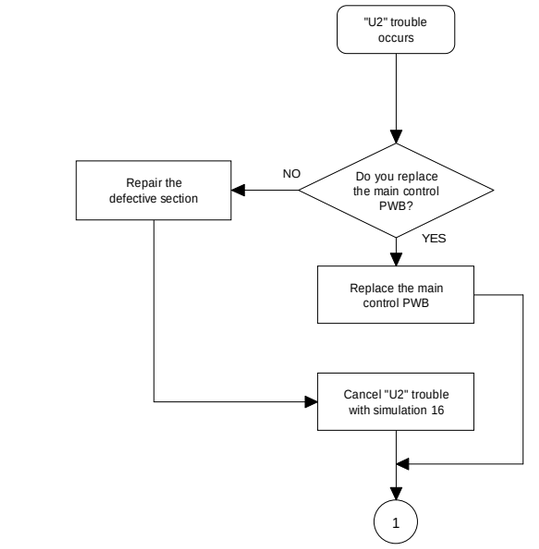
The purpose is to reset the memory data to operate the machine properly.
Use the attached service memory data recording sheet to memorize the newest data when servicing in order to cope with the above situations. This improves efficiency in servicing and realizes quick recovery.

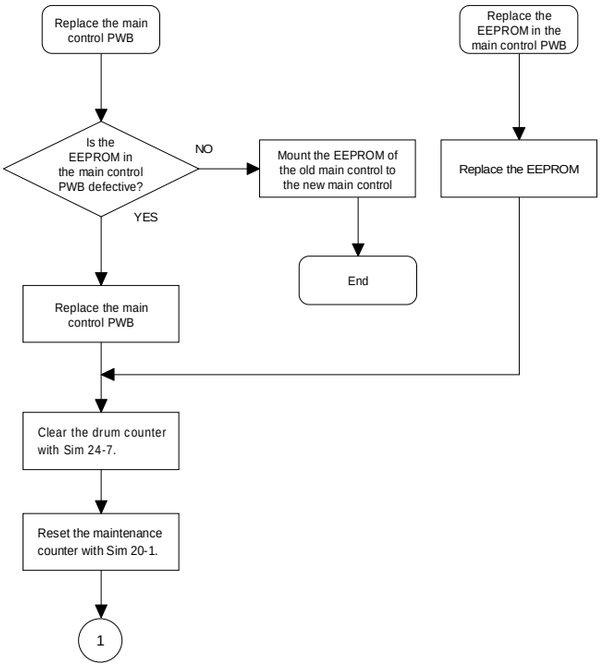
3. Remedies

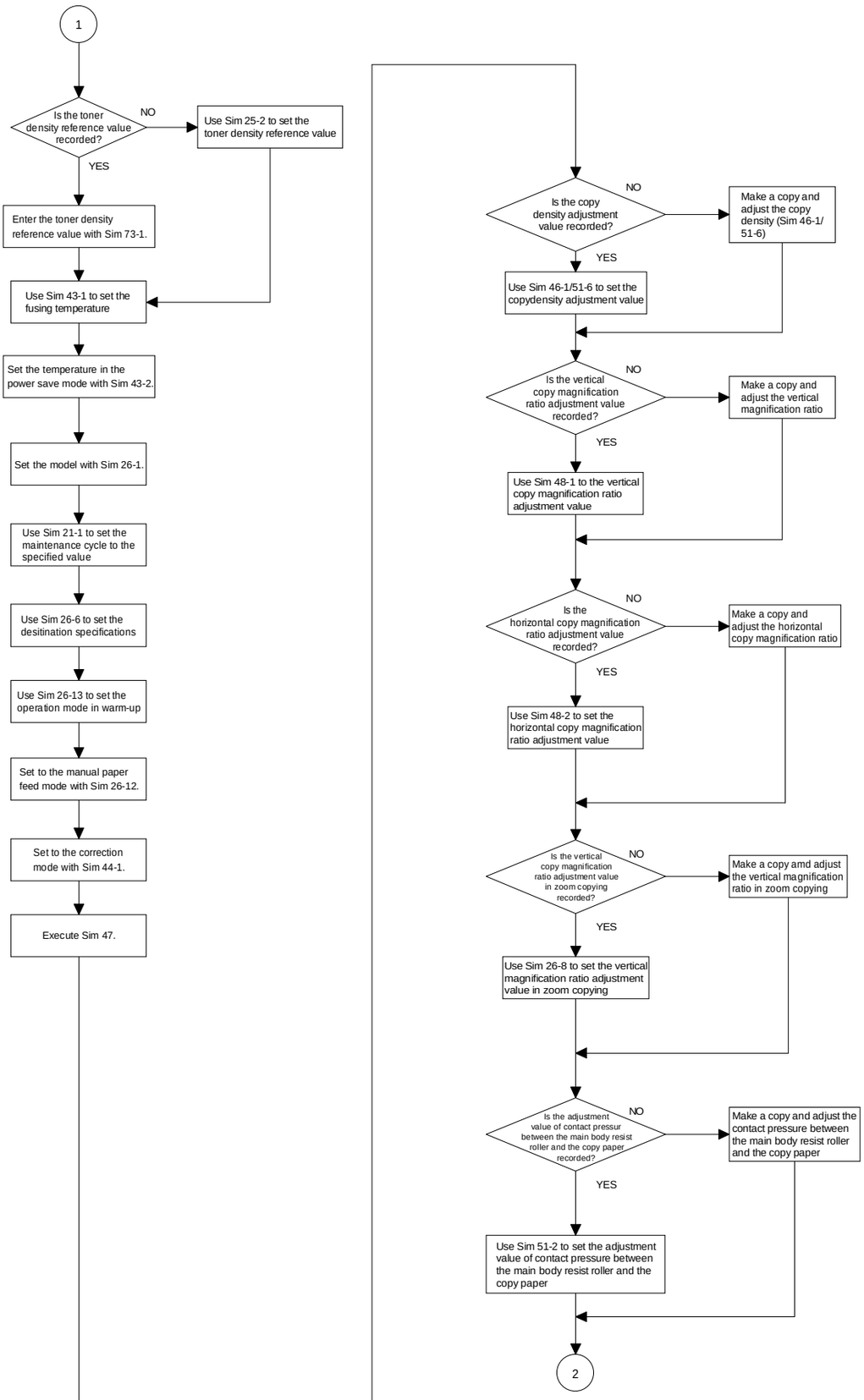
Perform the procedures according to the following flowcharts.
"Sim" in the flowchart means "Simulation."

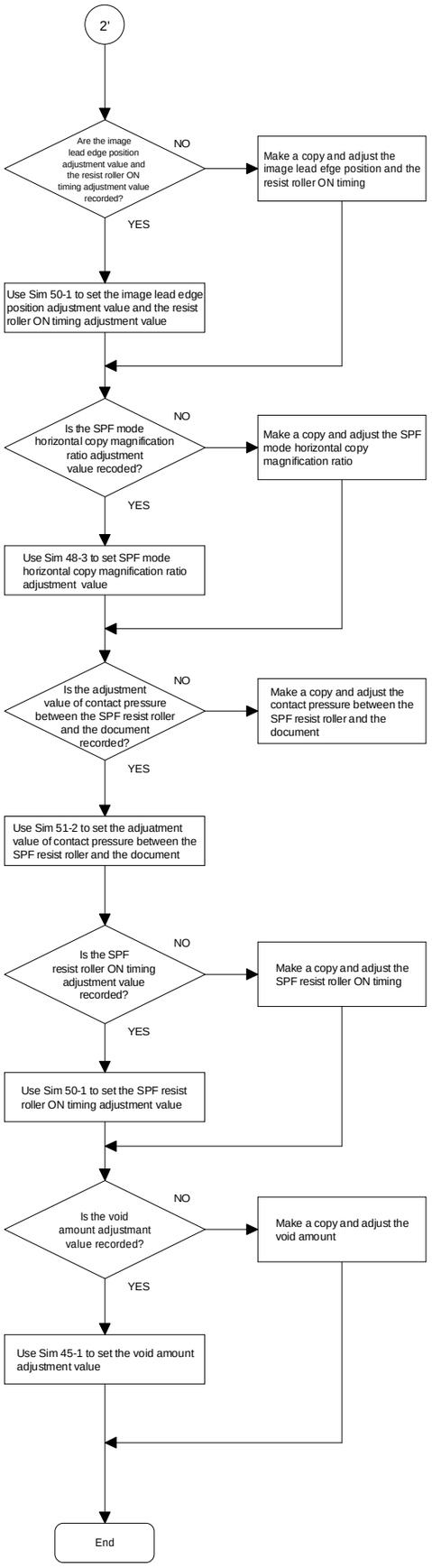
Memory trouble

Procedures for memory trouble, main control PWB replacement, and main control PWB EEPROM replacement




Replace the main control PWB
Replace the EEPROM in the main control PWB
Is the EEPROM in the main control PWB defective?
NO
Mount the EEPROM of the old main control to the new main control
Replace the EEPROM
YES
End
Replace the main control PWB
Clear the drum counter with Sim 24-7.
Reset the maintenance counter with Sim 20-1.
1


1
Is the toner density reference value recorded?
NO
YES
Use Sim 25-2 to set the toner density reference value
Enter the toner density reference value with Sim 73-1.
Use Sim 43-1 to set the fusing temperature
Set the temperature in the power save mode with Sim 43-2.
Set the model with Sim 26-1.
Use Sim 21-1 to set the maintenance cycle to the specified value
Use Sim 26-6 to set the desitination specifications
Use Sim 26-13 to set the operation mode in warm-up
Set to the manual paper feed mode with Sim 26-12.
Set to the correction mode with Sim 44-1.
Execute Sim 47.
Is the copy density adjustment value recorded?
NO
YES
Make a copy and adjust the copy density (Sim 46-1/ 51-6)
Use Sim 46-1/51-6 to set the copydensity adjustment value
Is the vertical copy magnification ratio adjustment value recorded?
NO
YES
Make a copy and adjust the vertical magnification ratio
Use Sim 48-1 to the vertical copy magnification ratio adjustment value
Is the horizontal copy magnification ratio adjustment value recorded?
NO
YES
Make a copy and adjust the horizontal copy magnification ratio
Use Sim 48-2 to set the horizontal copy magnification ratio adjustment value
Is the vertical copy magnification ratio adjustment value in zoom copying recorded?
NO
YES
Make a copy amd adjust the vertical magnification ratio in zoom copying
Use Sim 26-8 to set the vertical magnification ratio adjustment value in zoom copying
Is the adjustment value of contact pressur between the main body resist roller and the copy paper recorded?
NO
YES
Make a copy and adjust the contact pressure between the main body resist roller and the copy paper
Use Sim 51-2 to set the adjustment value of contact pressure between the main body resist roller and the copy paper
2


2'
Are the image lead edge position adjustment value and the resist roller ON timing adjustment value recorded?
NO
Make a copy and adjust the image lead efge position and the resist roller ON timing
YES
Use Sim 50-1 to set the image lead edge position adjustment value and the resist roller ON timing adjustment value
Is the SPF mode horizontal copy magnification ratio adjustment value recoded?
NO
Make a copy and adjust the SPF mode horizontal copy magnification ratio
YES
Use Sim 48-3 to set SPF mode horizontal copy magnification ratio adjustment value
Is the adjustment value of contact pressure between the SPF resist roller and the document recorded?
NO
Make a copy and adjust the contact pressure between the SPF resist roller and the document
YES
Use Sim 51-2 to set the adjuatment value of contact pressure between the SPF resist roller and the document
Is the SPF resist roller ON timing adjustment value recorded?
NO
Make a copy and adjust the SPF resist roller ON timing
YES
Use Sim 50-1 to set the SPF resist roller ON timing adjustment value
Is the void amount adjustmant value recorded?
NO
Make a copy and adjust the void amount
YES
Use Sim 45-1 to set the void amount adjustment value
End

4. Set value recording sheet

Purpose/kind	Section	Contents			
		Main code	Sub code	Set value	Description
Adjustment	Paper feed section	51	2		Adjustment value of contact pressure of the paper on the main body resist roller
	Optical unit	26	8		Adjustment value (lens shift amount adjustment value) of copy magnification ratio in zoom copying
		45			Adjustment value of copy paper lead edge void amount
		46	1		Adjustment value of copy density (exposure level) in each copy mode and of copy density gradient (exposure gradient)
					Manual copy mode density level 1 (Not toner save mode)
					Manual copy mode density level 5 (Not toner save mode)
					Manual copy mode density level 1 (Toner save mode)
					Manual copy mode density level 5 (Toner save mode)
					Auto copy mode density level 1 (Not toner save mode)
					Auto copy mode density level 5 (Not toner save mode)
					Auto copy mode density level 1 (Toner save mode)
					Auto copy mode density level 5 (Toner save mode)
					Photo copy mode density level 1 (Not toner save mode)
					Photo copy mode density level 5 (Not toner save mode)
		47			The AE sensor and the optical section characteristics memory data for the change in the copy lamp application voltage
		48	1		The vertical copy magnification ratio adjustment value
			2		The horizontal copy magnification ratio adjustment value (when the document table is used)
		50	1		The adjustment value of copy image position on the copy paper
					SEt value A
					Set value B
					Set value C
	SPF unit	48	3		The horizontal copy magnification ratio adjustment value (When the SPF is used)
		51	2		The adjustment value of the contact pressure between the SPF resist roller and the document
			6		SPF copy mode density level
	Developing unit	25	2		Setting the toner concentration level
Setting	Specifications	26	1		Model setting (With SPF or without ?)
			6		Destination specifications
	Fuser unit	26	13		Setting of the main motor operation mode in warming up
		43	1		The set value of fusing temperature
			2		Fusing temperature setting in the power save mode
	Process	44	1		Image correction mode function setting
	Maintenance counter	21	1		Setting of the maintenance cycle

Memorizef•%!alues in theolumn ofxSet valu for ef cient s vicing hen the memory trouble occurs and the EEPROm is replaced.
Make a copy of this sheet and use with the service sheet.

5. Memory simulation list

<table>
<tr><th rowspan="2">Purpose/kind</th><th rowspan="2">Section</th><th colspan="4">Contents</th><th rowspan="2">Ref. page</th></tr>
<tr><th>Main code</th><th>Sub code</th><th>Default value</th><th>Description</th></tr>
<tr><td rowspan="25">Adjustment</td><td>Paper feed section</td><td>51</td><td>2</td><td>50</td><td>Adjustment value of contact pressure of the paper on the main body resist roller</td><td>8-3</td></tr>
<tr><td rowspan="16">Optical unit</td><td>26</td><td>8</td><td>11</td><td>Adjustment value (lens shift amount adjustment value) of copy magnification ratio in zoom copying</td><td>7-16</td></tr>
<tr><td>45</td><td>1</td><td>50</td><td>Adjustment value of copy paper lead edge void amount</td><td>7-20</td></tr>
<tr><td rowspan="13">46</td><td rowspan="13">1</td><td></td><td>Adjustment value of copy density (exposure level) in each copy mode and of copy density gradient (exposure gradient)</td><td rowspan="13">7-26</td></tr>
<tr><td></td><td>Manual copy mode density level 1 (Not toner save mode)</td></tr>
<tr><td></td><td>Manual copy mode density level 5 (Not toner save mode)</td></tr>
<tr><td></td><td>Manual copy mode density level 1 (Toner save mode)</td></tr>
<tr><td></td><td>Manual copy mode density level 5 (Toner save mode)</td></tr>
<tr><td></td><td>Auto copy mode density level 1 (Not toner save mode)</td></tr>
<tr><td></td><td>Auto copy mode density level 5 (Not toner save mode)</td></tr>
<tr><td></td><td>Auto copy mode density level 1 (Toner save mode)</td></tr>
<tr><td></td><td>Auto copy mode density level 5 (Toner save mode)</td></tr>
<tr><td></td><td>Photo copy mode density level 1 (Not toner save mode)</td></tr>
<tr><td></td><td>Photo copy mode density level 5 (Not toner save mode)</td></tr>
<tr><td>47</td><td></td><td></td><td>The AE sensor and the optical section characteristics memory data for the change in the copy lamp application voltage</td><td>7-26</td></tr>
<tr><td rowspan="2">48</td><td>1</td><td>50</td><td>The vertical copy magnification ratio adjustment value</td><td>7-15</td></tr>
<tr><td>2</td><td>50</td><td>The horizontal copy magnification ratio adjustment value (when the document table is used)</td><td>7-16</td></tr>
<tr><td rowspan="4">50</td><td rowspan="4">1</td><td></td><td>The adjustment value of copy image position on the copy paper</td><td rowspan="4">7-19</td></tr>
<tr><td>50</td><td>Set value A</td></tr>
<tr><td>50</td><td>Set value B</td></tr>
<tr><td>50</td><td>Set value C</td></tr>
<tr><td>Process</td><td>44</td><td>1</td><td></td><td>Process correction mode setting</td><td></td></tr>
<tr><td>Developer unit</td><td>25</td><td>2</td><td></td><td>Toner density initial set value</td><td>4-5</td></tr>
<tr><td rowspan="3">SPF unit</td><td>48</td><td>3</td><td>50</td><td>The horizontal copy magnification ratio adjustment value (when the document table is used)</td><td>7-18</td></tr>
<tr><td rowspan="2">51</td><td>2</td><td>50</td><td>The adjustment value of contact pressure between the SPF resist roller and the document</td><td>8-3</td></tr>
<tr><td>6</td><td></td><td>Adjusting value of copy density in the SPF mode</td><td>7-28</td></tr>
<tr><td rowspan="4">Setting</td><td>Specifications</td><td>26</td><td>1</td><td></td><td>Setting the option</td><td>8-7</td></tr>
<tr><td>26</td><td>6</td><td></td><td>Specifications setting by destination
<table>
<tr><th colspan="2">Code No.</th><th rowspan="2">Destination</th></tr>
<tr><th>Normal machine</th><th>Zoom machine</th></tr>
<tr><td>4</td><td>14</td><td>Japan</td></tr>
<tr><td>1</td><td>11</td><td>U.K.</td></tr>
<tr><td>5</td><td>15</td><td>AB series other than U.K.</td></tr>
<tr><td>6</td><td>16</td><td>U.S.A.</td></tr>
<tr><td>7</td><td>17</td><td>Inch series other than U.S.A.</td></tr>
<tr><td>25</td><td>35</td><td>Indonesia</td></tr>
</table></td><td>8-8</td></tr>
<tr><td>Fuser unit</td><td>26</td><td>13</td><td>0</td><td>Setting of the main motor operation mode in warming up.
<table>
<tr><th>Code No.</th><th>Operation mode</th><th>Operation</th></tr>
<tr><td>0</td><td>Normal mode</td><td>When the fusing temperature reaches the specified level, the main motor stops.</td></tr>
<tr><td>1</td><td>Long mode</td><td>The main motor keeps rotating until the completion of the warming up.</td></tr>
</table></td><td>8-8</td></tr>
<tr><td rowspan="2">43</td><td>1</td><td>185˚C</td><td>Fusing temperature set value</td><td>8-8</td></tr>
<tr><td>2</td><td></td><td>Fusing temperature setting value in the power save mode</td><td>8-8</td></tr>
</table>

Purpose/kind	Section	Contents				Ref. page
		Main code	Sub code	Default value	Description	
Counter	Total counter	22	5		Used to confirm the total counter value.	8-9
		20	1		Used to reset the maintenance counter.	8-9
		21	1	0	Used to set the maintenance cycle.	8-9
		22	1		Used to confirm the maintenance count value.	8-9
			2		Used to confirm the set maintenance cycle (maintenance preset counter).	8-9
Trouble cancel		14			Used to cancel troubles other than self diag "U2". After cancellation of the trouble, the simulation is also cancelled automatically.	8-12
		16			Used to cancel self diag "U2" trouble. After cancellation of the trouble, the simulation is also cancelled automatically.	8-12

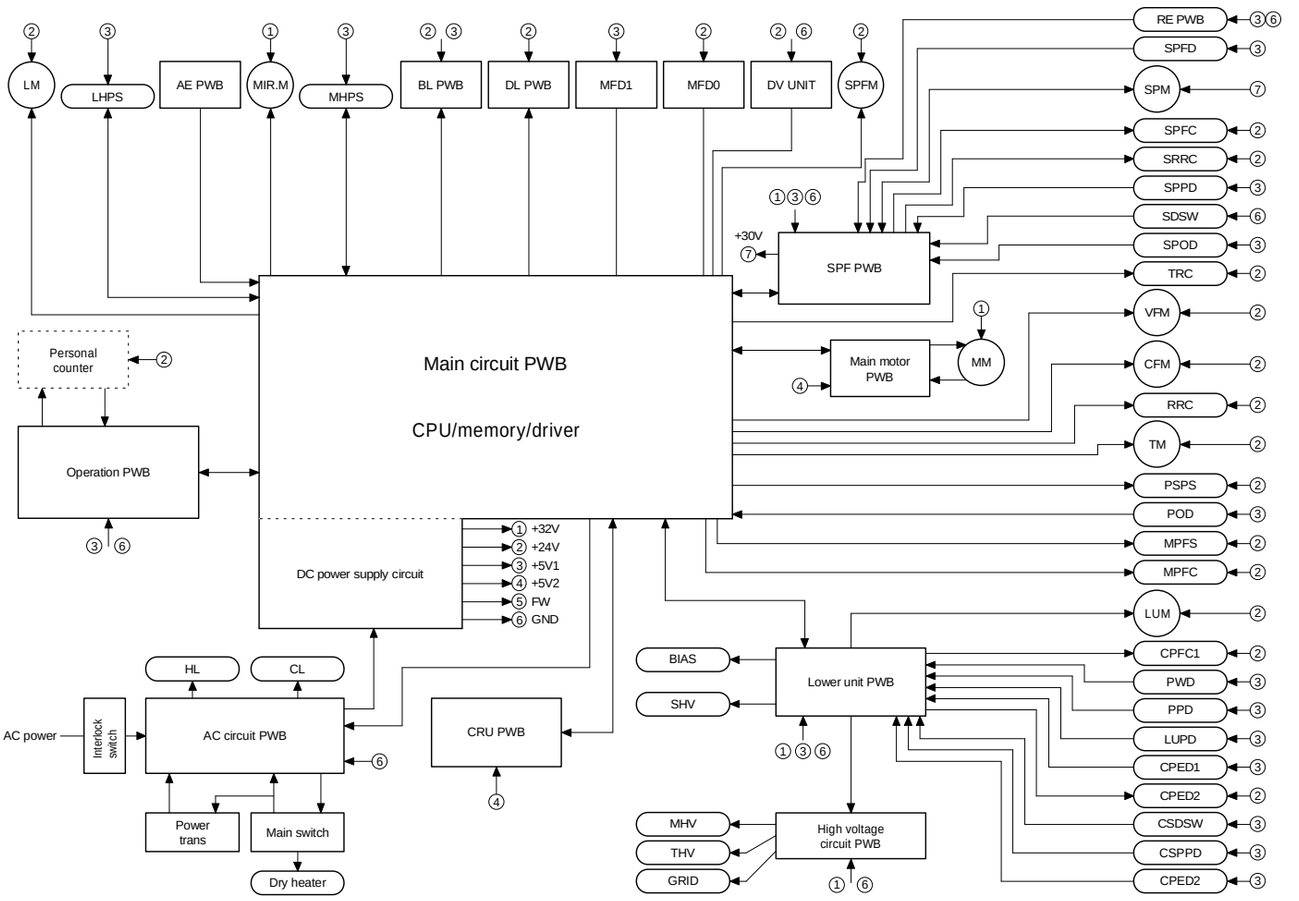
[11] MAINTENANCE

▲ Replacement/Installation F Cleaning ☆ Lubrication
× Check (Clean, replace, or adjust as required.)

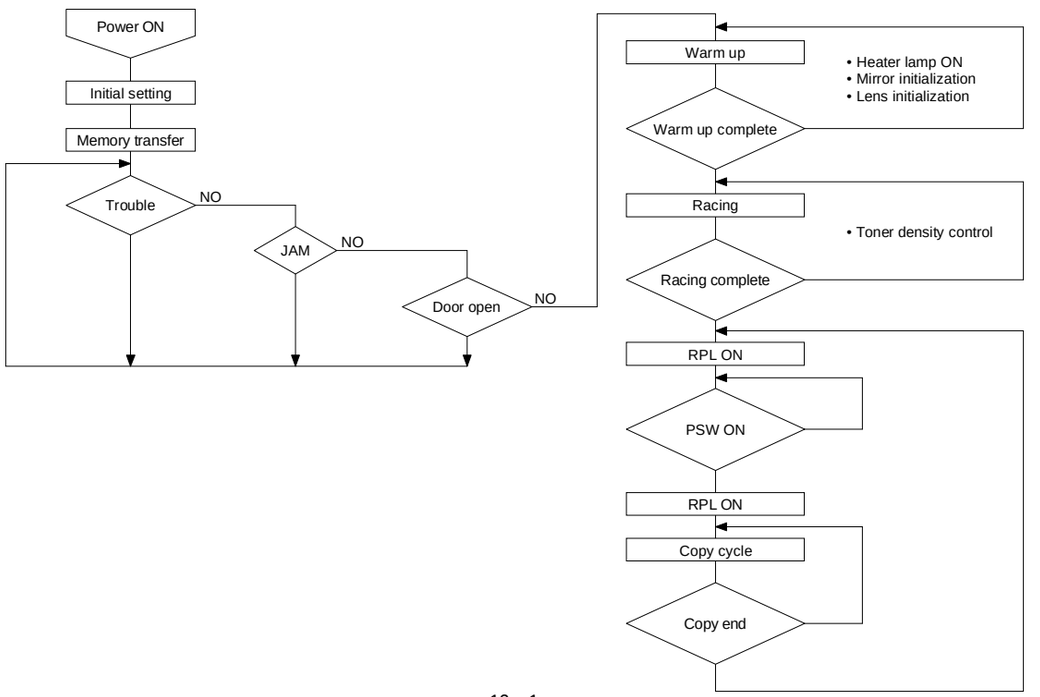
Content		SRU specifications					
		40K	80K	120K	160K	200K	240K
Developer	Developer (New two-component developing system)		Replace at the same time as toner supply by small quantity. (No periodic replacement)				
	Toner supply				Replacement at every 4K by the user		
	DV seal	×	×	×	×	×	×
Drum	Drum	▲	▲	▲	▲	▲	▲
	main charger (Case, saw teeth)	F	▲	F	▲	F	▲
	Screen grid	F	▲	F	▲	F	▲
	Drum separation pawl	F	▲	F	▲	F	▲
	Cleaning blade	▲	▲	▲	▲	▲	▲
	Toner reception seal	×	×	×	×	×	×
Transfer	Transfer charger wire	F	▲	F	▲	F	▲
	Separation plate (Half-etching)	▲	▲	▲	▲	▲	▲
	Transfer charger case	F	F	F	F	F	F
Fusing	Fuser lower CL roller	▲	▲	▲	▲	▲	▲
	Fuser upper heat roller	F	▲	F	▲	F	▲
	Fuser bearing	F	▲	F	▲	F	▲
	Fuser gears	F	▲	F	▲	F	▲
	Fuser lower heat roller	F	▲	F	▲	F	▲
	Thermistor	F	F	F	F	F	F
	Fuser upper separation pawl	F	▲	F	▲	F	▲
	Fuser lower separation pawl	F	▲	F	▲	F	▲
Optical	Mirror, lens, reflector	F	F	F	F	F	F
	Sensors	F	F	F	F	F	F
	Drive wire, pulley	×	×	×	×	×	×
	Mirror base rail	☆	☆	☆	☆	☆	☆
	Glass, OC matt	F	F	F	F	F	F
Transport	Manual paper feed section roller	F	F	F	F	F	F
	Cassette paper feed section roller	F	F	F	F	F	F
	Paper transport roller in each section	F	F	F	F	F	F
	Suction belt (Only for the specified destination)	F	F	F	F	F	F
	Paper transport section paper guide	F	F	F	F	F	F
SPF	Paper feed roller	F	F	F	F	F	F
	Paper transport roller	F	F	F	F	F	F
	Original transport guide	F	F	F	F	F	F
	OC matt	F	F	F	F	F	F
Other	Gear section (Driving)	☆	☆	☆	☆	☆	☆
	Blank lamp. descharge lamp	F	F	F	F	F	F
	Ozone filter		F		F		F
	Picture quality	×	×	×	×	×	×

[12] ELECTRICAL SECTION

1. System block diagram

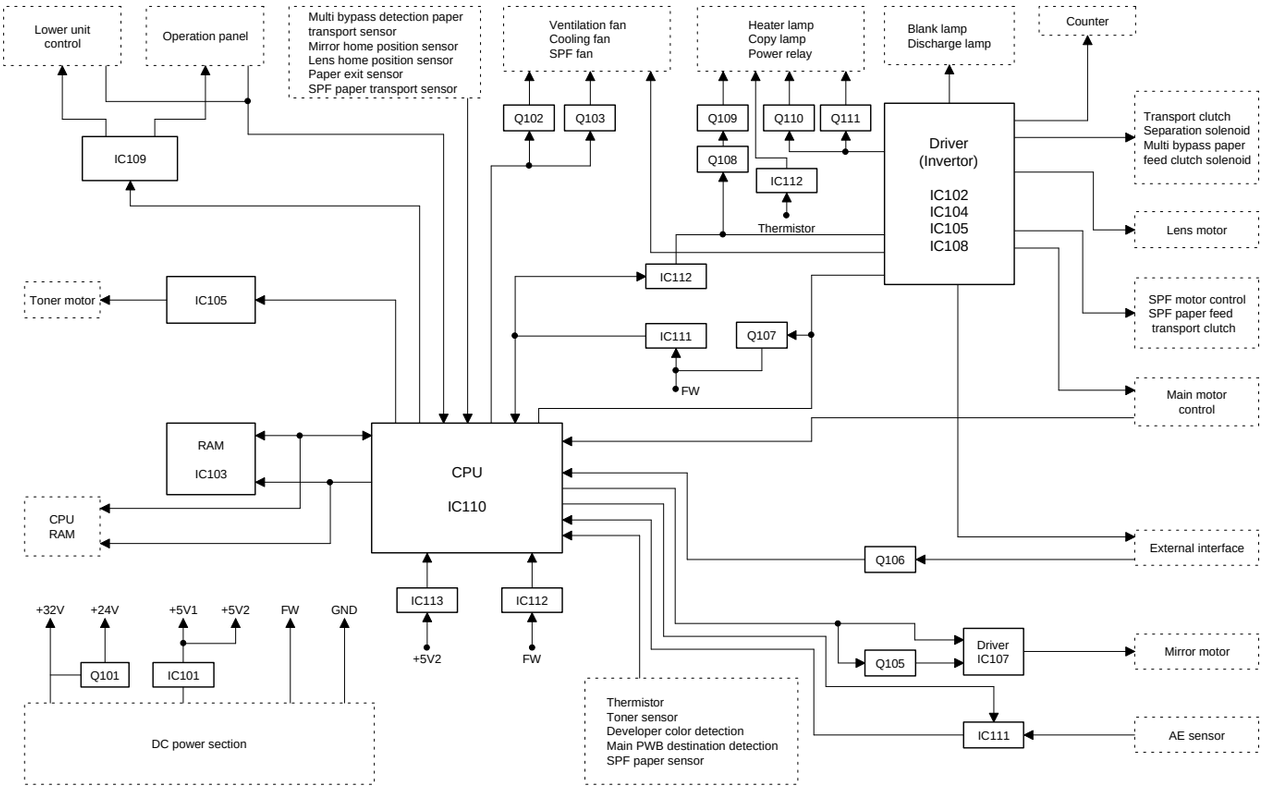


2. System operation at power ON



3. Main circuit

(1) Block diagram

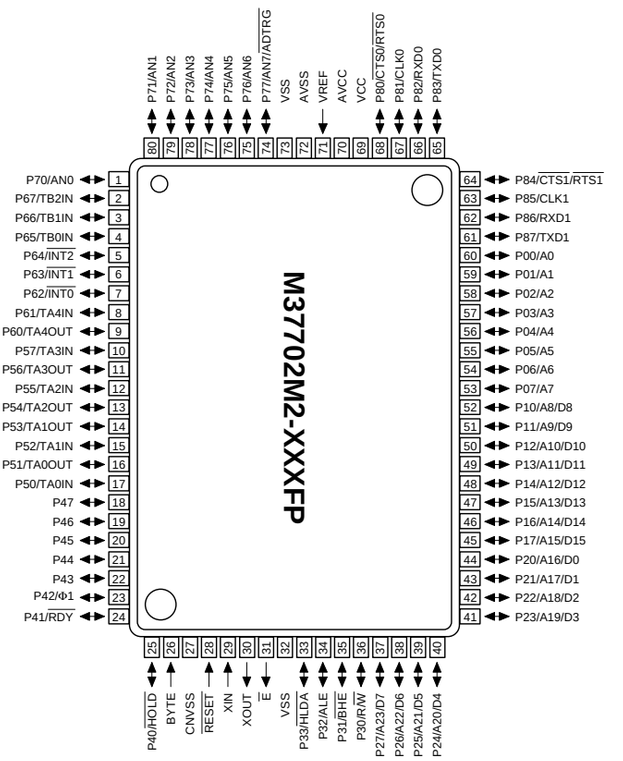


(2) CPU (IC110) M37702

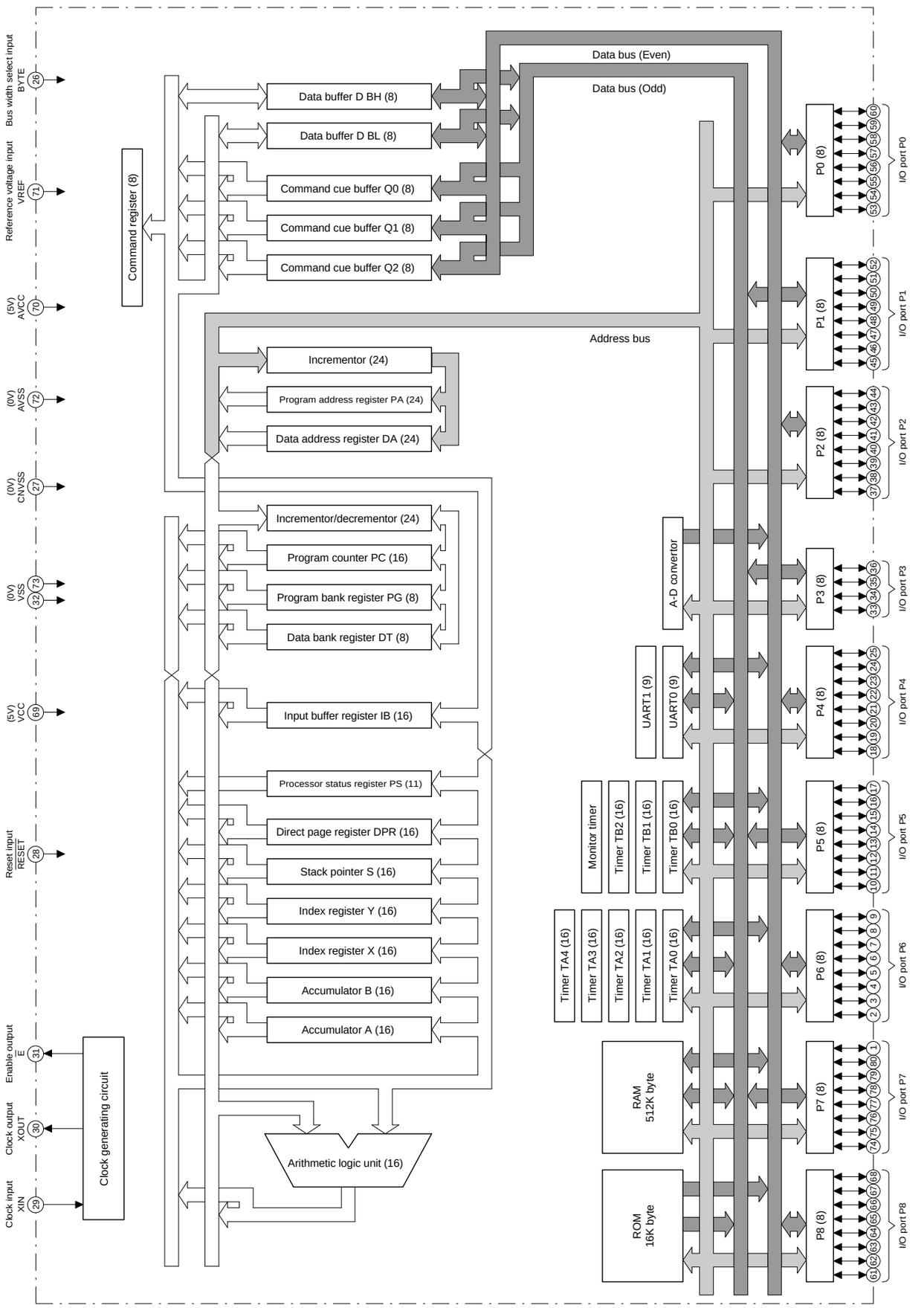
1 Outline

The M37702M2-XXXFP is a 16-bit, single-chip microprocessor which employs the high performance silicon gate CMOS process, and it is packed in 80-pin plastic mold flat package. The single chip microprocessor is equipped with a big address space of 16MB, the command cue buffer to execute commands at high speeds, and the data buffer. The CPU is of 16 bit parallel process, and allows selection of 8 bit parallel process mode if necessary.

2 Pin arrangement



3 Block diagram



4 CPU: M37702 (IC110) pin signals

Pin No.	Port	Signal name	IN/OUT	H/L	Description
1	P70	AES	IN		Analog input signal (AE sensor)
2	P67	IN1	IN		Lower unit serial parallel IC input 2 port
3	P66	IN0	IN		Lower unit serial parallel IC input 2 port
4	P65	MMRE	IN		Main motor timer input
5	P64	FWS	IN		Power zero cross pulse detection signal
6	P63	MHPS	IN	H	Mirror home position detecting signal ("HIGH at Home position)
7	P62	AEG2	OUT		AE gain select signal
8	P61	AEG1	IN/OUT		AE gain select signal
9	P60	SMPWM	IN/OUT	H	Transport motor timer output clock
10	P57	AEG0	OUT		AE gain select signal
11	P56	CLPWM	OUT	H	Copy lamp control signal
12	P55	HL	OUT	H	Heater lamp control signal
13	P54	MMPWM	OUT	H	Main motor timer output clock
14	P53	PR	OUT	H	Power relay control signal
15	P52	BLPWM	OUT		Blank lamp control signal
16	P51	PSPS	OUT	H	Paper separation solenoid control signal
17	P50	DL	OUT	H	Discharge lamp control signal
18	P47	SCLK	OUT		Data output clock signal to EEPROM
19	P46	SDAT	IN/OUT	—	Serial data I/O to EEPROM
20	P45	LHPS	IN	H	Lens home position detecting signal (HIGH at home position)
21	P44	IMP	IN	—	NC
22	P43	SPFM	OUT	H	SDH cooling fan motor control signal
23	P42	VFM	OUT	H	Ventilation fan motor control signal
24	P41	CFM	OUT	H	Optical system cooling fan motor control signal
25	P40	POD	OUT	H	Paper exit detecting sinal
26	BYTE	BYTE	IN		External data bus select signal ("L" = 16 bit, "H" = 8 bit)
27	CNVss	CNVss	IN	H	Processor mode selection
28	$\overline{\text{RESET}}$	$\overline{\text{RESET}}$	IN	L	Reset signal (Reset at "L")
29	XIN	XIN	IN		Clock IN
30	XOUT	XOUT	OUT		Clock OUT
31	$\overline{E}$	$\overline{E}$	OUT		Enable output
32	Vss	Vss	OUT		Power (GND)
33	P33	PNC	OUT		Personal counter clock
34	P32	TRC	OUT	H	Transport roller clutch
35	P31	DVCUT	OUT	H	Developer fuse cut
36	P30	DVF	IN	L	Developer fuse (Not use)
37	P27	TMb	OUT	H	Toner supply motor drive signal
38	P26	TMa	OUT	H	Toner supply motor drive signal
39	P25	LEMT0	OUT	H	Lens motor drive signal A
40	P24	LEMT1	OUT	H	Lens motor drive signal B
41	P23	LEMT2	OUT	H	Lens motor drive signal –A
42	P22	LEMT3	OUT	H	Lens motor drive signal –B
43	P21	MPFC	OUT	H	Multi paper feed clutch control signal
44	P20	MPFS	OUT	H	Multi paper feed solenoid control signal
45	P17	MFD1	IN		Single/multi input 1 L / Not set H / Single paper present L / Multi H / Single paper exhaust
46	P16	MFD0	IN		Single/multi input 2 H / Not set L / Single paper present L / Multi H / Single paper exhaust
47	P15	MRPS	OUT	H	
48	P14	MRMT0	OUT	H	Mirror motor drive signal $\overline{A}$
49	P13	MRMT1	OUT	H	Mirror motor drive signal $\overline{B}$
50	P12	MRMT2	OUT	H	Mirror motor drive signal –A
51	P11	MRMT3	OUT	H	Mirror motor drive signal –B
52	P10	SRPL	OUT	H	SDF lamp
53	P07	SRRC	OUT	H	Resist roller clutch drive signal
54	P06	SPFC	OUT	H	Paper feed roller clutch drive signal
55	P05	SME	OUT		Transport motor ON/OFF control signal

Pin No.	Port	Signal name	IN/OUT	H/L	Description
56	P04	SMG	OUT	H	Transport motor gain signal
57	P03	SPPD	IN	H	Paper entry detecting signal
58	P02	KEY3	IN	L	Operation PWB key input signal
59	P01	KEY1	IN	L	Operation PWB key input signal
60	P00	KEY0	IN	L	Operation PWB key input signal
61	P87	OP-DATA	OUT		Serial data output to operation PWB
62	P86	NC	—	—	(NC)
63	P85	OP-CLK	OUT		Data output clock signal to operation PWB
64	P84	OP-LATCH	OUT		Data latch signal to operation $\overline{\text{PWB}}$
65	P83	UN-DATA	OUT		Serial data output to lower unit PWB
66	P82	NC	—	—	(NC)
67	P81	UN-CLK	OUT		Data output clock signal to lower unit PWB
68	P80	UN-LATCH	OUT		Data latch signal to lower unit PWB
69	Vcc	Vcc			Power (5V)
70	AVcc	AVcc			Analog/Digital convertor reference power voltage
71	V_{REF}	V_{REF}			Analog/Digital convertor reference voltage input
72	AV_{SS}	AV_{SS}			Analog/Digital convertor ground pin
73	Vss	Vss			Power (GND)
74	P77	ANS	IN		Analog input signal (SPF sensor input)
75	P76	MBT	IN		Analog input signal (Main PWB destination setting)
76	P75	CLV	IN		Analog input signal (Copy lamp control)
77	P74	RTH	IN		Analog input signal (Fusing thermistor)
78	P73	CRUT	IN		Analog input signal (CPU destination setting)
79	P72	DVC	IN		Analog input signal (Developer color detection)
80	P71	TCSA	IN		Analog input signal (Toner density sensor)

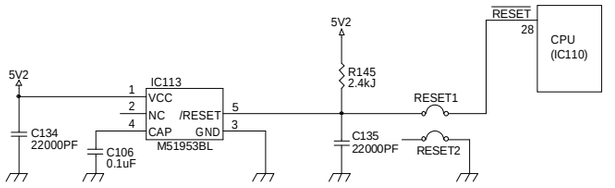
(3) Start/stop control circuit

1 General

The circuit senses ON/OFF state of the power source to control start/stop of the circuits.

The DC power section supplies power voltages (V_H=+32V, VB=+24V, VC=+10V, VD1=5V, VD2=5V).

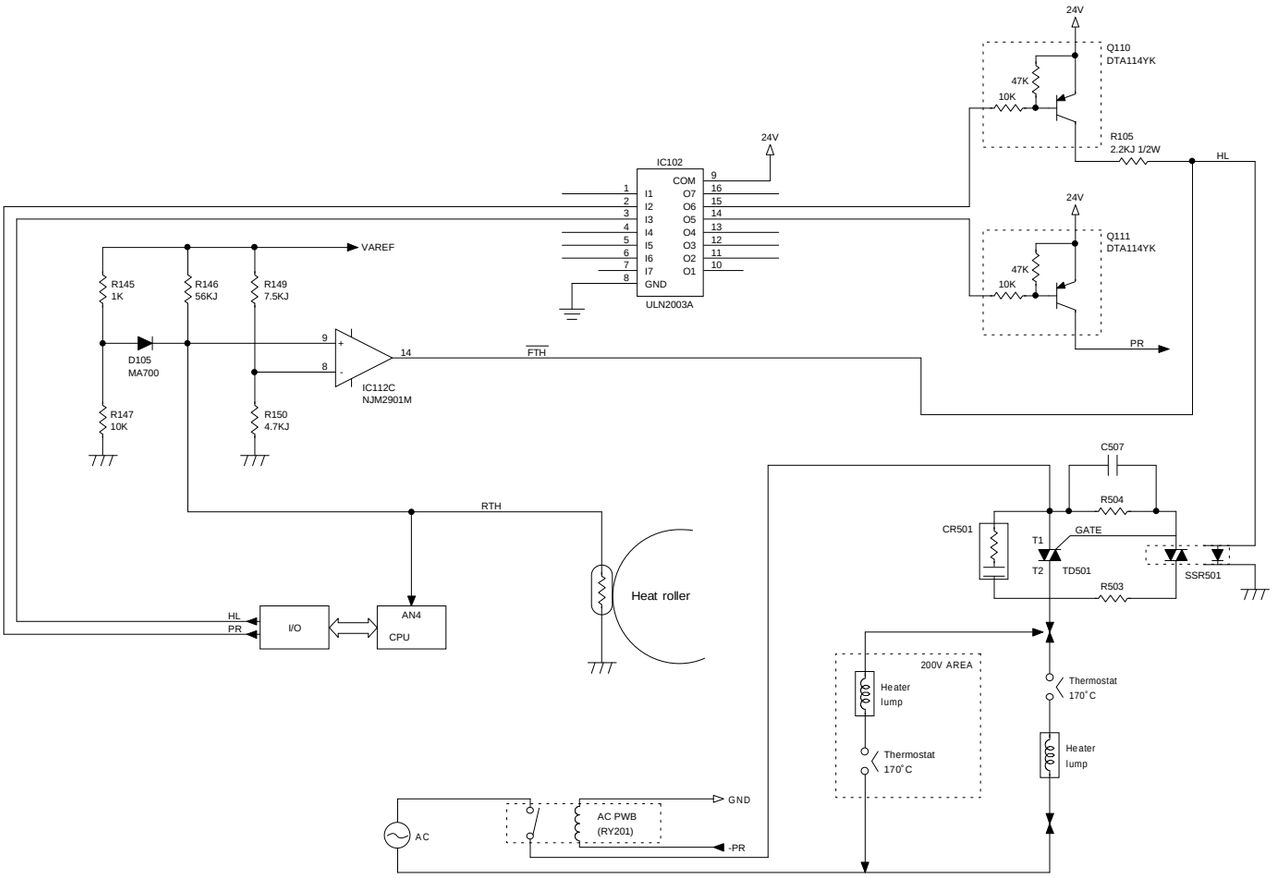
After the power voltage reaches the specified level, the circuit operation is started. Before the power voltage falls below the specified level, the circuit operation is stopped, preventing against malfunctions.



(4) Heater lamp control circuit

1 General

The heater lamp control circuit detects the heat roller surface temperature with the thermistor, converts it into voltage level, and outputs it to the CPU analog input pin.
The CPU converts the analog voltage into digital signal level, compares it with the value set by simulations, turns on/off the heater lamp according to the level, and maintain the heat roller surface temperature at a constant level.



When the heat roller surface temperature is low, the thermistor resistance increases. When the surface temperature is high, the resistance decreases. The thermistor terminal voltage, therefore, increases when the heat roller surface temperature is low, and decreases when the temperature is high. The thermistor terminal voltage is inputted to the CPU analog port, and the CPU controls on/off of the heater lamp with the input voltage level.

[High temperature protecting circuit in hung up of the CPU]

The voltage at IC133 3 pin (reference voltage) is divided by R149 and R150, and the thermistor terminal voltage is applied to IC112 9 pin.
When 9 pin voltage is lower than 8 pin voltage (the heat roller surface temperature: about 230 degree C), IC112 14 pin becomes LOW. As a result, HL signal is pulled to the GND level and the heater lamp lighting signal is not generated. (IC112 output 14 pin is normally HIGH (Open state).)

[When the heat roller surface temperature is lower than the set temperature]

a. Since the thermistor pin voltage is higher than the set level, output signal HL from the CPU becomes HIGH.

b. HL signal is passed through IC102, TR, and Q110 to the solid state relay.
When, therefore, HL signal is LOW, the internal triac turns on.

c. When the internal traic turns on, a pulse is applied to the gate of the external triac to allow a current to flow from the power source through the heater lamp to the triac, thus lighting the heater lamp.

[When the heat roller surface temperature is higher than the set temperature]

a. Since the thermistor pin voltage is lower than the set level, output signal HL from the CPU becomes low.

b. HL becomes low, SSR is turned off, the external triac is turned off, and the heater lamp is turned off.

[Q110]

Q110 protects the heater lamp from lighting due to trouble in the harness of the heater lamp drive signal.

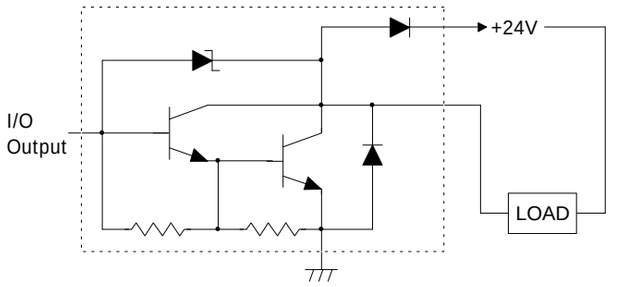
(5) Driver circuit (Solenoid, magnetic clutch)

1 General

The control signals of each load outputted from the CPU and I/O cannot drive the load directly. The output, therefore, is delivered to the load through the driver IC.

2 Operation

The driver circuit forms a Darlington circuit with two transistors to obtain a large drive current (load current) from a small input current (I/O output current). When the driver input voltage is HIGH (+5V), the transistor is turned on to flow a current in the arrow direction, operating the load. When the driver is turned on, the driver output pin voltage is 0V.

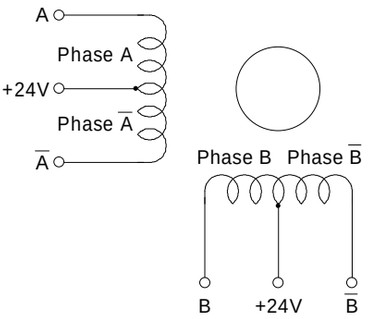


(6) Stepping motor drive circuit

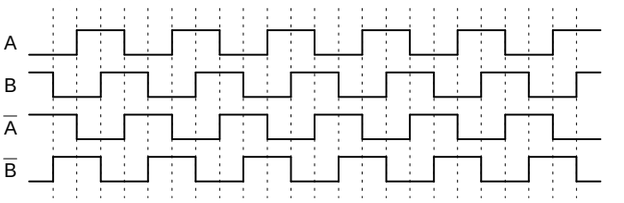
1 General

The driver circuit drives the lens drive motor.

A: Stepping motor phase A coil drive signal
B: Stepping motor phase B coil drive signal
$\overline{A}$: Stepping motor phase $\overline{A}$ coil drive signal
$\overline{B}$: Stepping motor phase $\overline{B}$ coil drive signal



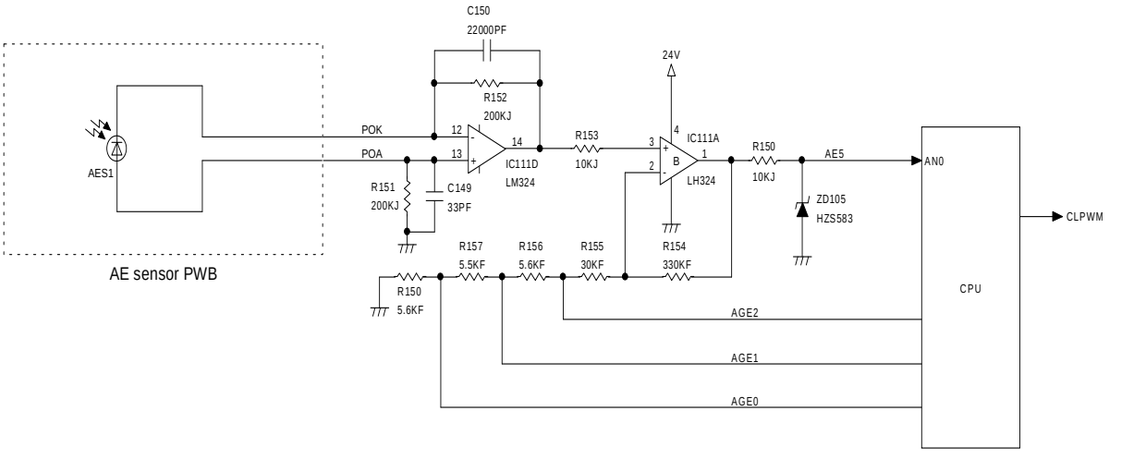
Stepping motor time chart



Drive signal	Lens drive
A	LEMT0
B	LEMT1
C	LEMT2
B	LEMT3

(7) AE (Auto Exposure) sensor circuit

The AE circuit is composed of the AE sensor PWB which is composed of the photo diode, and the I-V convertor circuit, and the amplifier circuit on the control PWB.



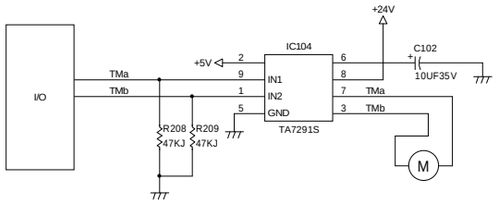
Operation amplifier A performs I-V conversion of the original density level (minute current) from the sensor. Operation amplifier B amplifies the output of operation amplifier A to a suitable level for inputting to the CPU.

The amplifying level is automatically set by selecting the AE gain signal ($\overline{AEG0}$ ~ $\overline{AEG2}$) outputted from the CPU when simulations SIM 47 is executed.

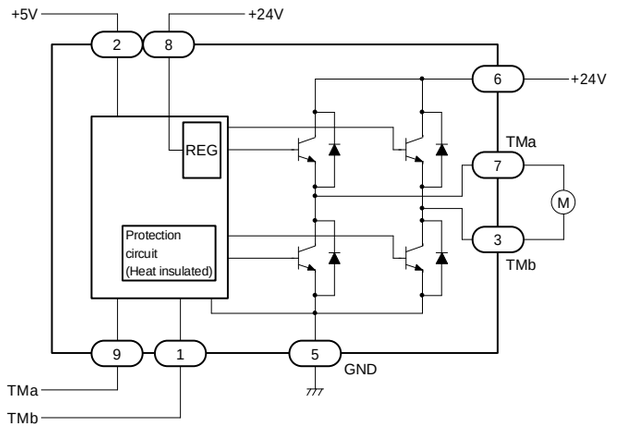
AE operation is performed by the software in the control PWB. When a reflected ray enters the sensor, a voltage corresponding to the light quantity is inputted to the CPU. The CPU compares the input voltage and the copy lamp application voltage and controls the copy lamp voltage so that the exposure level corresponds to the original density.

(8) Toner supply motor drive circuit

IC104 is the motor control IC which drives the toner supply motor with the pulse signals (TMa, TMb) outputted from the I/O chip.



Internal circuit



Truth value table

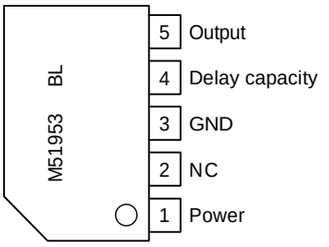
Input		Output		Mode
TMa	TMb	TMa	TMb	
L	L	Å	Å	Stop
H	L	H	L	CW/CCW
L	H	L	H	CCW/CW
H	H	L	L	Brake

Å : High impedance

(9) Reset IC (IC113)

1 Outline

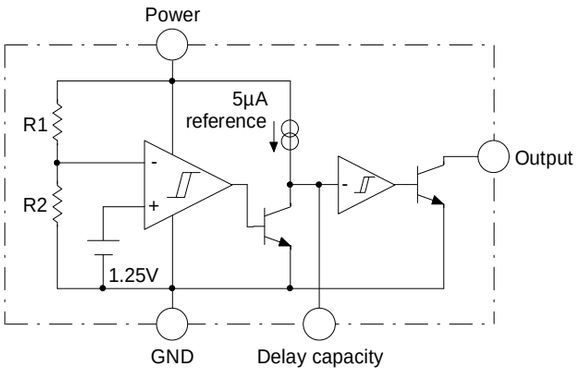
The M51953 BL is the most suitable semiconductor IC for detecting the power voltage to reset the CPU and every type of logic circuit. It is equipped with the delay circuit to provide delay time just by adding an external capacitor.

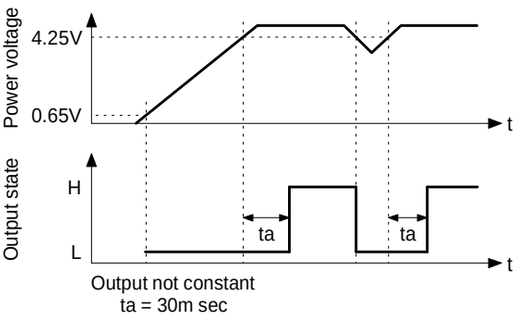


External view 5P5

2 Operation

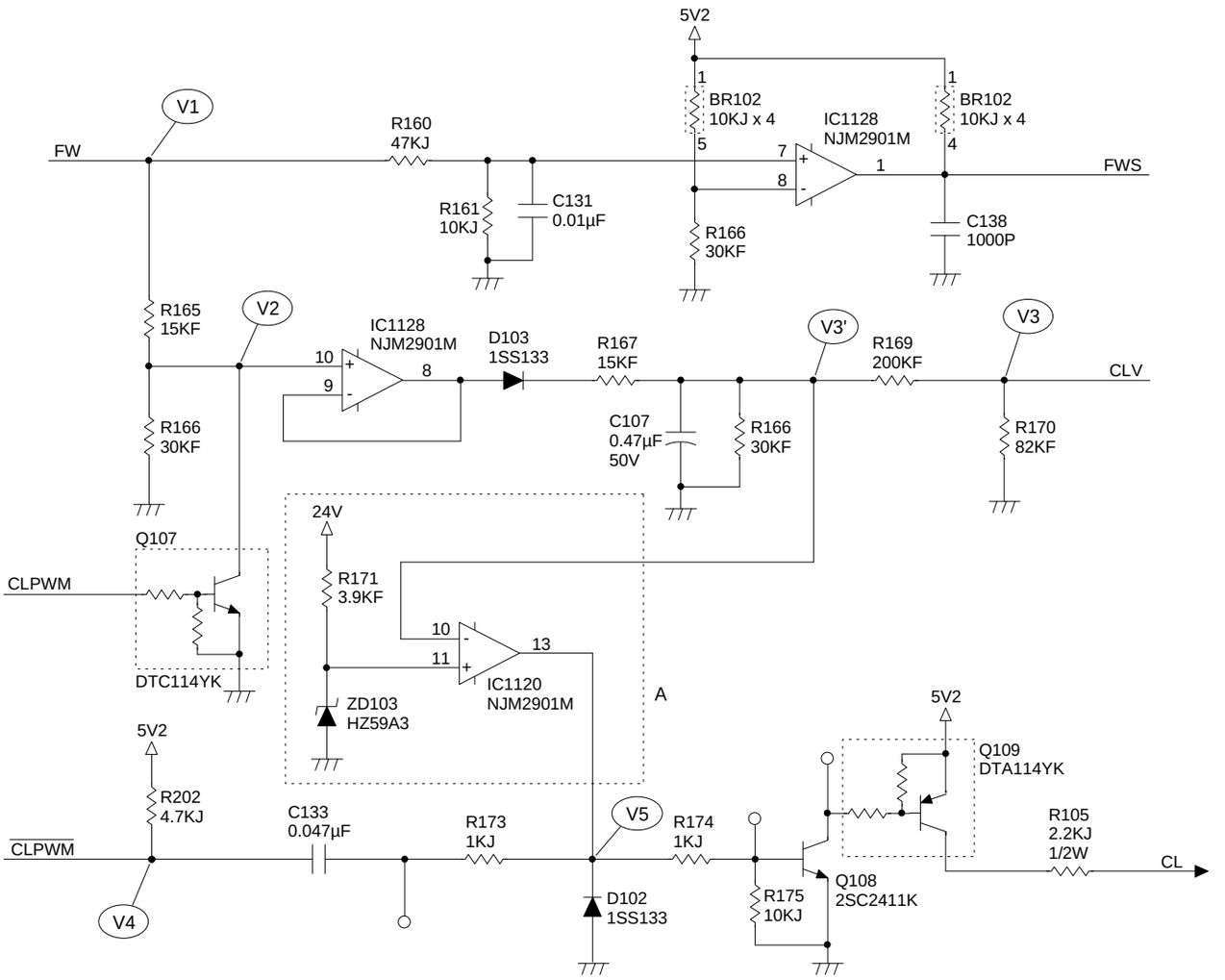
After td (= 30msec) from when the voltage exceeds 4.25V after power rising, the output becomes HIGH.
"td" is set by the external capacitor.

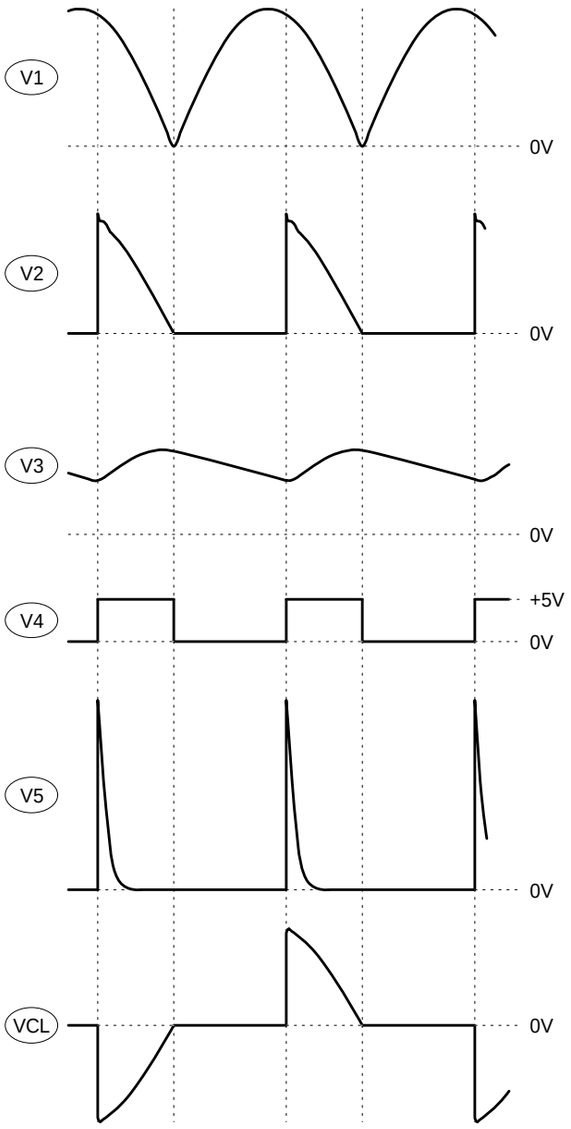




(10) Copy lamp control section

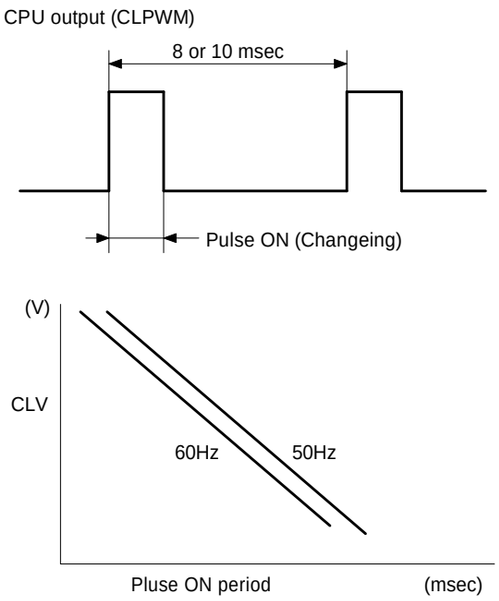
The change in the copy lamp exposure level is adjusted by changing the ON period duty of the output pulse (CLPUM) from the CPU and controlling the copy lamp voltage. Fig. 1 and Fig. 2 show the circuit diagram and the waveform.





The copy lamp is switched by the triac. At the rising of CLPWM signal (V4), the trigger signal CL is sent to the triac to light the lamp. The lamp will goes off later at the zero cross point of V1 waveform.
The CPU reads the control voltage level (CLV) corresponding to the change in the copy lamp voltage, and compares it with the reference level to change the ON period of the output pulse.
The CLV forms the same waveform as the copy lamp voltage waveform where the Ac input's full rectified waveform (FW) is disabled for ON periods of the pulse. It is converted into a DC level by the low pass filter composed of C107 and R168, and is inputted to the CPU.

The relationship between the CLV and the pulse ON period is as shown in the figure below:



- When the pulse ON period is shorter, the CLV becomes higher, and vice versa.
- The pulse ON period rises at he AC zero cross timing and is driven by the duty.
- The copy lamp lighting signal generates positive pulses with C133 at falling of the CPU output, and inputs the pulses through the two-stage transistor to the photo triac.
- Section A in the figure shows the circuit which prevents against application of an overvoltage to the copy lamp.
  When the pulse on period is abnormally short, the DC level applied to the IC112 10 pin becomes higher than the reference voltage of 11 pin, driving the 13 pin output to the GND level.
  Therefore the lighting signal is not transmitted to R174 and later section and the lamp is not lighted.
  By setting the reference voltage to a level not exceeding the rated voltage, an abnormal lighting is avoided.

1 When the AC input voltage becomes low (with the copy lamp control voltage at constant):
The FW peak at point (V1) becomes lower to decrease the CLU voltage at (V3).

Then the CPU shortens the output pulse ON period until the CLV reaches the reference level, increasing the power applied to the coy lamp.

2 When the Ac input voltage becomes higher (with the copy lamp control voltage at constant):
The reversed operations of 1 are performed to lengthen the output pulse ON period, decreasing the current flowing through the copy lamp.

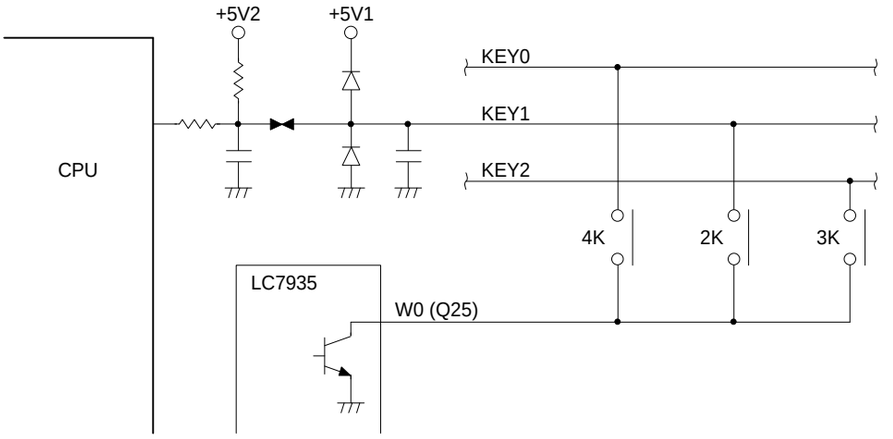
3 When the copy lamp control voltage is decreased:
The CLV reference level in the CPU is lowered. The output pulse ON period is lengthen until the CLV reaches the level, decreasing the power supplied to the copy lamp.

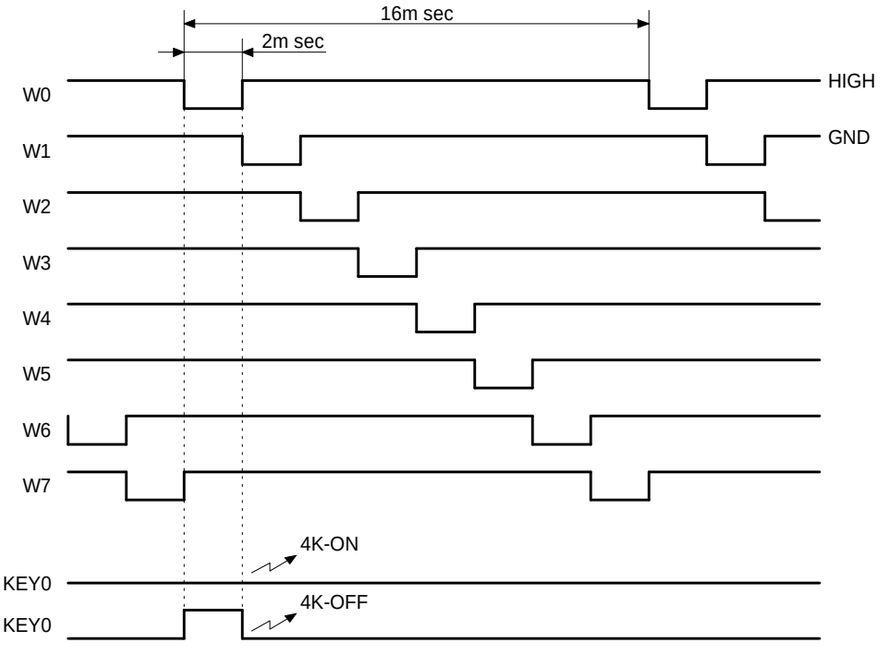
4 When the copy lamp control voltage is increased:
The reversed operations of 3 are performed, to shorten the output pulse ON period, increasing the power applied to the coy lamp.

4. Operating section

(1) Outline

The operating circuit is composed of the key matrix circuit and the display matrix circuit.
Key detection: Keys are detected with signal matrix of W0 (Q25) ~ W7 (Q32) and KEY0 ~ KEY2.
With W0 signal at LOW (GND) and W1 ~ W7 at HIGH (open), the level of KEY0 ~ KEY2 is checked and "H" or "L" state of 4K, 2K and 3K in the key matrix is judged to judge ON/OFF.
For W1 ~ W7, switching is made every 2 msec for judgement.

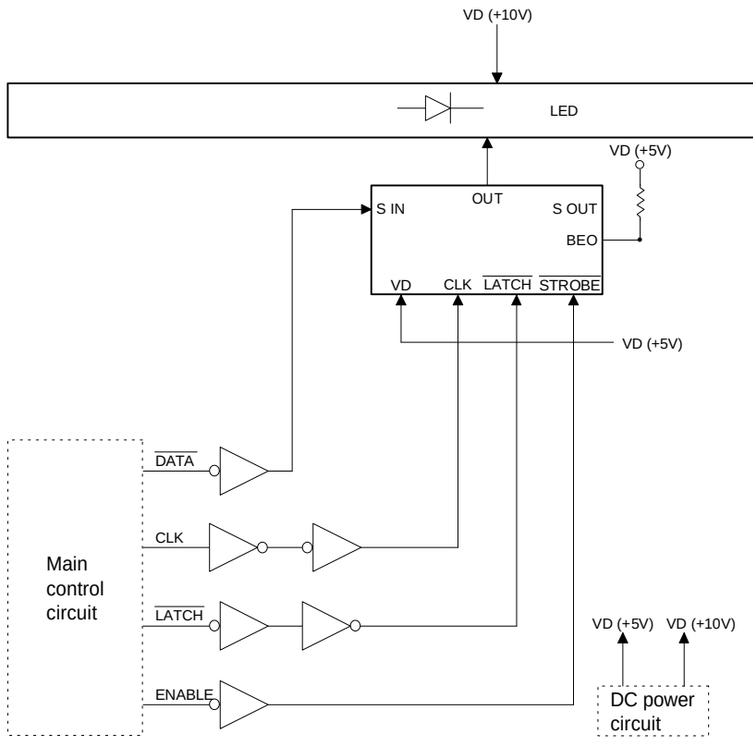


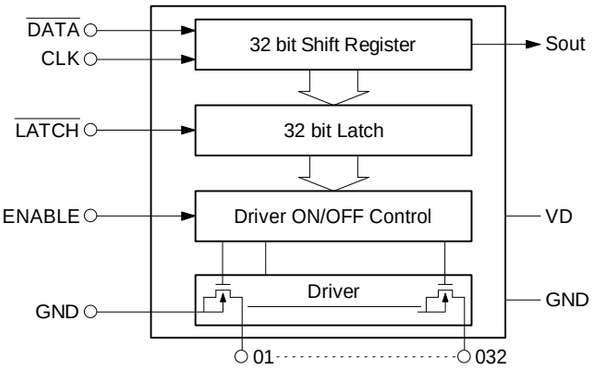


(2) Display circuit

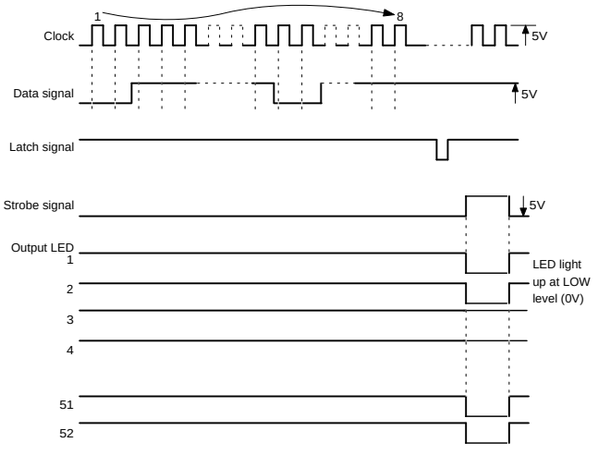
Control is performed with the data signal and the control signal from the control circuit.

1 Block diagram





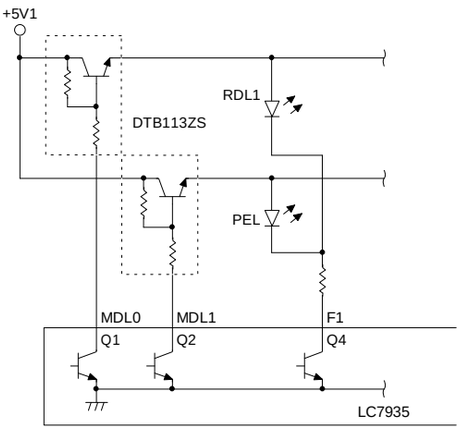
2 Operation

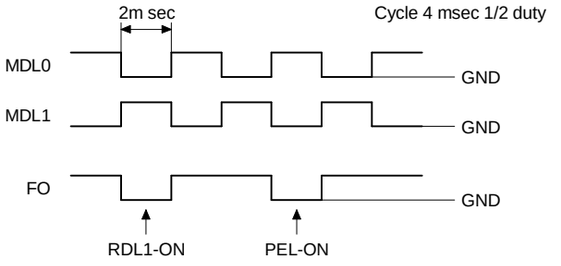


DAta signal (8 bit) sent from the main control PWB is shifted at the rising timing of the clock and retained at the rising timing of the latch signal.
The retained data is outputted when STROBE signal becomes HIGH (5V).

(3) LED display

The lED is lighted up by the signal matrix of MDL0 (Q1) ~ MDL1 (Q2) and F0 (Q3) ~ F20 (Q23).
By turning on/off ports F0 ~ F20 with the timing of MDL0 and MDL1, the LED at the matrix cross point is lighted up.





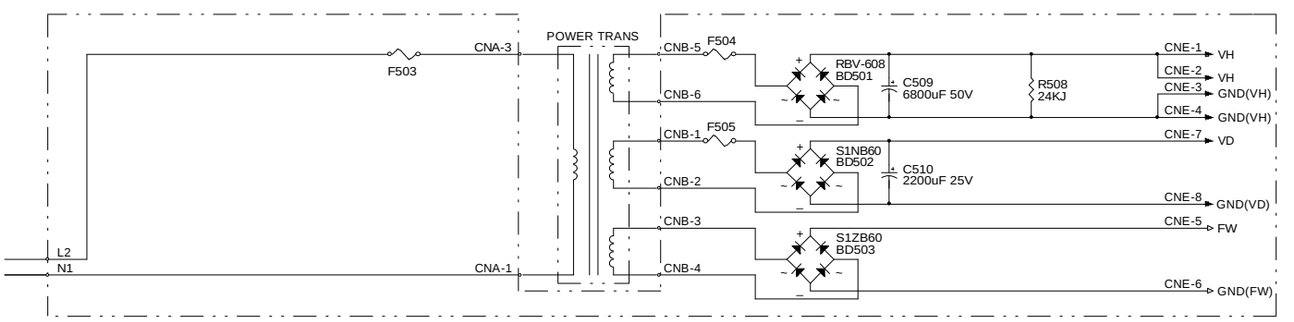
5. Power section

Each AC voltage generated by the power trans in the AC PWB unit is full-wave rectified and smoothed to stabilize each voltage (UH, UB, VD) in the main PWB side, and is supplied to loads.

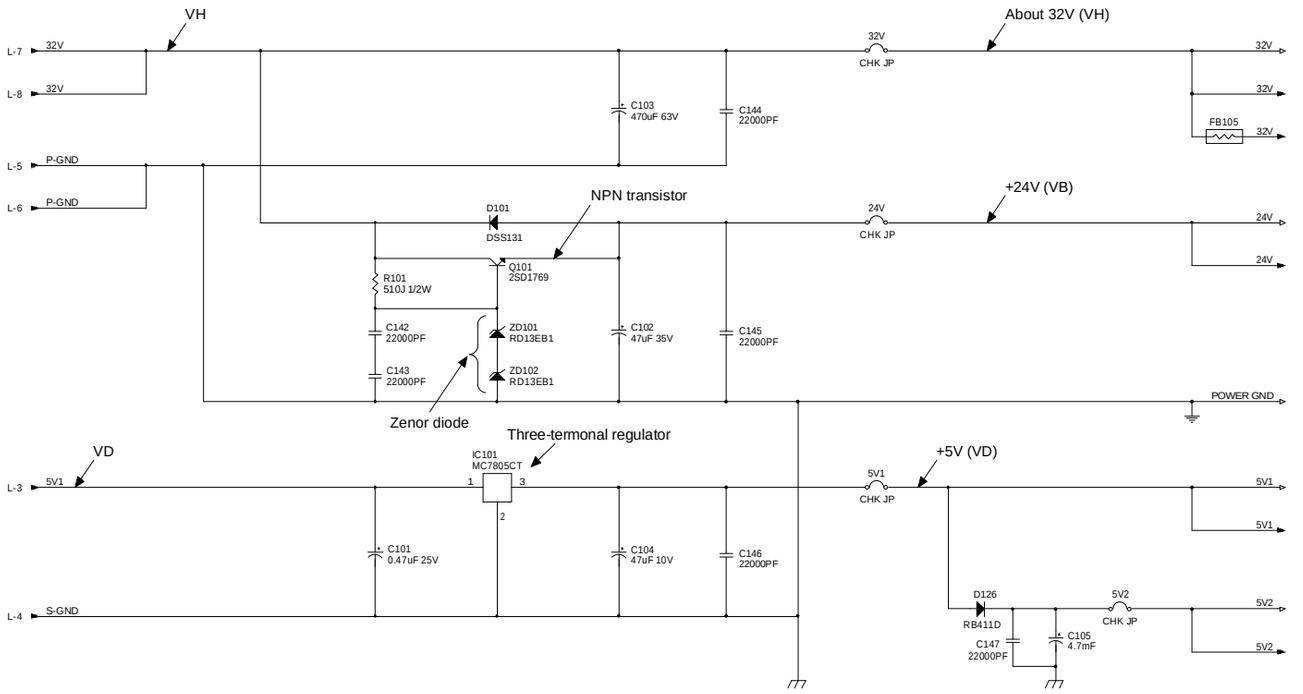
(1) Signal name and output voltage

GND: 0V
VH: +30 ~ 44V (Separated into 24V and 32V supply in the main PWB.)
VD: +24V ~ 35V (Forms 5V supply in the main PWB.)
FW: Full-wave rectification

- AC PWB unit



- In the main PWB unit



SF2014/SF2114/SF2214

SF2014/SF2114/SF2214

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
000	00000000			
001	00000001	CCAB-0793FC02	FRONT EXTERIOR (SF-2114)	AX
001	00000001	CCAB-0793FC03	FRONT EXTERIOR (SF-2214)	AX
001	00000001	CCAB-0793FC01	FRONT EXTERIOR (SF-2014)	AX
001	00000002	GCAB-0795FCZZ	LEFT EXTERIOR UPPER	AU
001	00000003	XHBSE40P10000	SCREW(M4X10)	AA
001	00000004	LSOU-0129FCZZ	DELIVERY TRAY	AU
001	00000005	GCAB-0796FCZZ	REAR EXTERIOR UPPER (SF-2014/SF-2114)	AY
001	00000005	GCAB-0796FCZ1	REAR EXTERIOR UPPER (SF-2214)	AY
001	00000006	GCAB-0797FCZZ	REAR EXTERIOR LOWER(100V SERIES)	AS
001	00000006	GCAB-0797FCZ1	REAR EXTERIOR LOWER(200V SERIES)	AS
001	00000007	GCAB-0794FCZZ	RIGHT EXTERIOR UPPER	AQ
001	00000008	CFIX-0461FC03	TABLE GLASS FIXING PLATE(INCH SERIES)	AS
001	00000008	CFIX-0461FC01	TABLE GLASS FIXING PLATE(JAPAN ONLY)	AU
001	00000008	CFIX-0461FC02	TABLE GLASS FIXING PLATE(EXPORT..AB S	AU
001	00000009	PGLSP0081FCZZ	TABLE GLASS	AY
001	00000010	XHBSE30P08000	SCREW(M3X8)	AA
001	00000011	PCOVP1226FCZZ	FRAME COVER	AX
001	00000012	MLEVP0581FCZ1	OP LEVER	AD
001	00000013	CSHT-0061FC01	INTER LOCK SWITCH SHUTTER	AG
001	00000014	MSPRT1565FCZZ	RACK RETURN SPRING	AA
001	00000015	XEBSD30P08000	SCREW(M3X8)	AA
001	00000016	PCOVP1227FCZZ	FUSING CONNECTOR COVER	AE
001	00000017	TCAUA0770FCZZ	SERVICE CAUTION LABEL(EXPORT..OTHER C	AB
001	00000017	TCAUH0918FCZZ	SERVICE CAUTION LABEL(USA,AUSTRALIA)	AA
001	00000017	TCAUH0687FCZZ	SERVICE CAUTION LABEL(CANADA ONLY)	AA
001	00000017	TCAUA0766FCZZ	SERVICE CAUTION LABEL(U,KINGDOM ONLY)	AB
001	00000018	TLABZ3569FCZZ	POWER SUPPLY MARK LABEL(JAPAN ONLY)	AB
001	00000019	XHBSE40P08000	SCREW(M4X8)	AA
001	00000020	TLABZ3570FCZZ	LABEL(JAPAN ONLY) (SF-2014/SF-2114)	AN
001	00000020	TLABZ3571FCZZ	LABEL(USA,U,KINGDOM,AUSTRALIA) (SF-20	AN
001	00000020	TLABZ3572FCZZ	LABEL(OTHER COUNTRIES) (SF-2014/SF-21	AN
001	00000020	TLABZ3587FCZZ	LABEL(JAPAN ONLY) (SF-2214)	AN
001	00000020	TLABZ3588FCZZ	LABEL(USA,U,KINGDOM,AUSTRALIA) (SF-22	AN
001	00000020	TLABZ3589FCZZ	LABEL(OTHER COUNTRIES) (SF-2214)	AN
001	00000021	PGLSP0082FCZZ	SPF SLIT GLASS (SF-2214)	AM
001	00000022	CFIX-0463FC01	SPF GLASS FIXING PLATE(JAPAN ONLY) (S	AV
001	00000022	CFIX-0463FC02	SPF GLASS FIXING PLATE(EXPORT..AB SER	AV
001	00000022	CFIX-0463FC03	SPF GLASS FIXING PLATE(INCH SERIES) (	AT
001	00000023	MSPRT2180FCZZ	SPF COLLAR SPRING (SF-2214)	AA
001	00000024	NPLYZ0158FCZZ	CL PULLEY (SF-2214)	AB
001	00000025	PMAGT0034FCZZ	PE MAGNET (SF-2214)	AC
002	00000001	GCOVH0218FCZZ	ORIGINAL COVER	AZ
002	00000002	MHNG-0180FCZZ	OC HINGE SR	AP
002	00000003	MHNG-0177FCZZ	OC HINGE SL	AP
002	00000004	XJBSD40P10000	SCREW(M4X10)	AA
002	00000005	PSHEZ3579FCZZ	OC SHEET(JAPAN ONLY)	AX
002	00000005	PSHEZ3578FCZZ	OC SHEET(EXPORT)	AX
002	00000006	TLABH3563FCZZ	CONDITION LABEL,GERMAN(GERMANY ONLY)	AE
002	00000006	TLABH3596FCZZ	CONDITION LABEL,DUTCH	AE
002	00000006	TLABH3564FCZZ	CONDITION LABEL,FRENCH	AE
002	00000006	TLABH3565FCZZ	CONDITION LABEL,SPANISH	AE
002	00000006	TLABH3566FCZZ	CONDITION LABEL,ITALIAN	AE
002	00000006	TLABH3561FCZZ	CONDITION LABEL,ENGLISH(USA,U,KINGDOM	AE
002	00000006	TLABH3584FCZZ	CONDITION LABEL,JAPANESE(JAPAN ONLY)	AG
002	00000006	TLABH3560FCZZ	CONDITION LABEL,JAPANESE(JAPAN ONLY)	AE
002	00000006	TLABH3562FCZZ	CONDITION LABEL,E,F,G,S(OTHER COUNTRI	AE
003	00000001	LSOU-0133FCZZ	SPF TRAY	AQ

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
003	00000002	GCOVH0223FCZZ	SPF UPPER COVER	AV
003	00000003	PGIDM1499FCZZ	SPF PAPER GUIDE	AE
003	00000004	LSOU-0131FCZZ	SPF BASE TRAY	BA
003	00000005	XEBSD30P06000	SCREW(M3X6)	AA
003	00000006	CPWBF1060FC51	SPF CONTROL PWB(100V SERIES)	BE
003	00000006	CPWBF1060FC52	SPF CONTROL PWB(200V SERIES)	BE
003	00000007	DHAI-2302FCZZ	BODY JOINT HARNESS	AS
003	00000008	MHNG-0179FCZZ	SPF HINGE R	AS
003	00000009	XJBSD40P12000	SCREW(M4X12)	AA
003	00000010	MHNG-0178FCZZ	SPF HINGE L	AT
003	00000011	PSHEZ3596FCZZ	SPF OC SHEET	AW
003	00000012	LPLTP4575FCZZ	SPF PAPER GUIDE PLATE	AC
003	00000013	QSW-L0341FCZZ	SWITCH(PE)	AH
003	00000014	PSHEP3598FCZZ	SPF SLIT FRONT SHEET	AD
003	00000015	XRESP40-05000	E TYPE RING	AA
003	00000016	NPLYZ0293FCZZ	SPF PULLEY(GP65-18)	AC
003	00000017	NBLTH0237FCZZ	SPF BELT(184S2M)	AG
003	00000018	PSHEP3029FCZZ	FLANGE SHEET DUP2	AA
003	00000019	XEPSD40P06000	SCREW(M4X6)	AA
003	00000020	RMOTV0752FCZZ	SPF MOTOR	BA
003	00000021	NGERH0349FCZZ	GEAR 28T	AC
003	00000022	LPINS0155FCZZ	PIN(M3X10)	AA
003	00000023	NGERH0496FCZZ	GEAR 16T	AD
003	00000024	LPINS0165FCZZ	PIN(M2X8)	AB
003	00000025	XRESP70-08000	E TYPE RING(7MM)	AA
003	00000026	NBRGC0504FCZZ	BEARING(F8X12X5 16X)	AC
003	00000027	NSFTZ2060FCZZ	SPF DRIVE SHAFT A	AG
003	00000028	CPLTM4574FC01	SPF DRIVE PLATE A	AG
003	00000029	XBPSD30P12000	SCREW(M3X12)	AA
003	00000030	NPLYZ0139FCZZ	PF TENSION PULLEY	AB
003	00000031	XRESP50-06000	E TYPE RING	AA
003	00000032	NPLYZ0294FCZZ	SPF PULLEY P40(S2M)	AC
003	00000033	XEBSE30P10000	SCREW(M3X10)	AA
003	00000034	XEBSE40P10000	SCREW(M4X10)	AA
003	00000035	TLABZ3574FCZZ	SPF SIZE LABEL(AB SERIES)	AG
003	00000035	TLABZ3575FCZZ	SPF SIZE LABEL(INCH SERIES)	AF
003	00000036	PSHEP3688FCZZ	BASE TRAY SHEET	AD
003	00000037	LSOU-0140FCZZ	SPF TRAY 2	AH
003	00000039	TLABZ3576FCZZ	ORIGINAL SET LABEL(JAPAN ONLY)	AE
003	00000040	TLABH3596FCZZ	CONDITION LABEL,DUTCH	AE
003	00000040	TLABH3584FCZZ	CONDITION LABEL,JAPANESE(JAPAN ONLY)	AG
003	00000040	TLABH3563FCZZ	CONDITION LABEL,GERMAN(GERMANY ONLY)	AE
003	00000040	TLABH3561FCZZ	CONDITION LABEL,ENGLISH(USA,U,KINGDOM	AE
003	00000040	TLABH3562FCZZ	CONDITION LABEL,E,F,G,S(OTHER COUNTRI	AE
003	00000040	TLABH3564FCZZ	CONDITION LABEL,FRENCH	AE
003	00000040	TLABH3565FCZZ	CONDITION LABEL,SPANISH	AE
003	00000040	TLABH3566FCZZ	CONDITION LABEL,ITALIAN	AE
003	00000041	XBPSD30P06000	SCREW(M3X6)	AA
003	00000042	PGIDM1515FCZZ	SPF TURN OVER PAPER GUIDE	AM
003	00000043	LPLTP4593FCZZ	SPF PRESSURE PLATE	AC
003	00000044	XEPSD30P06000	SCREW(M3X6)	AA
003	00000045	MARMP0178FCZZ	SPF PS GATE ARM	AD
003	00000046	LSTPP0302FCZZ	SPF PS GATE	AC
003	00000047	CROLP0921FC01	MANUAL FEED TAKE-UP ROLLER	AM
003	00000048	NROLR0922FCZZ	MANUAL PAPER FEED ROLLER	AR
003	00000049	NGERH0892FCZZ	16T GEAR	AB
003	00000050	NGERH0495FCZZ	GEAR 20T	AC
003	00000051	MARMP0177FCZZ	SPF ROLLER ARM	AF
003	00000052	MSPRT2212FCZZ	SPF PAPER FEEDING ROLLER SPRING	AB

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
003	00000053	NBRGP0302FCZZ	BEARING C	AB
003	00000054	LBOSZ0979FCZZ	CLUTCH BOSS A	AF
003	00000055	PPIPP0109FCZZ	PIPE A	AB
003	00000056	MSPRC1315FCZZ	CLUTCH SPRING A	AD
003	00000057	NSFTZ2059FCZZ	SPF PAPER FEEDING ROLLER SHAFT	AG
003	00000058	MARMP0179FCZZ	SPF ROLLER MOVEMENT ARM	AC
003	00000059	MLEVP0648FCZZ	SPF PE ACTUATOR	AC
003	00000060	VHPGP1A71A1-1	PHOTO SENSOR(GP1A71A1)	AG
003	00000061	DHAI-2301FCZZ	SPF HARNESS	AU
003	00000062	LBNDJ0013FCZZ	WIRE BAND	AA
003	00000063	PGIDH1500FCZZ	SPF PF PAPER GUIDE	AH
003	00000064	MLEVP0649FCZZ	SPF PS FRONT ACTUATOR	AC
003	00000065	PSHEZ3143FCZ1	MANUAL FEED SHEET	AB
003	00000066	PGIDH1516FCZZ	SPF PF LOWER PAPER GUIDE	AF
003	00000067	CROLR1048FC31	REVERSING ROLLER UNIT	AV
003	00000068	MSPRT2215FCZZ	SPF ROLLER PRESSURE SPRING	AA
003	00000069	LHLDZ1207FCZZ	SPF ROLLER HOLDER	AC
003	00000070	LFRM-0809FCZZ	SPF FRAME F	AE
003	00000071	NBRGC0133FCZ1	PF BEARING(M8)(B-F8-26)	AC
003	00000072	NBRGC0188FCZZ	PF BEARING	AB
003	00000073	NROLR1017FCZZ	SPF PS ROLLER UPPER	AU
003	00000074	NBRGZ0503FCZZ	BEARING(B-F5-13)	AC
003	00000075	NROLM1032FCZZ	SPF PS ROLLER LOWER	AK
003	00000076	MSPRT2216FCZZ	SPF PS ROLLER PRESSURE SPRING	AB
003	00000077	NROLR1034FCZZ	SPF DELIVERY ROLLER	AP
003	00000078	PGIDH1503FCZZ	SPF LOWER PAPER GUIDE	AK
003	00000079	MSPRT2217FCZZ	SPF ACC RETURN SPRING	AB
003	00000080	MLEVP0650FCZZ	SPF ACTUATOR	AC
003	00000081	NROLR1033FCZZ	SPF TRANSPORT ROLLER	AN
003	00000082	MSPRC2213FCZZ	SPF SLIT UPPER PG SPRING F	AB
003	00000083	MSPRC2214FCZZ	SPF SLIT UPPER PG SPRING R	AB
003	00000084	PGIDH1501FCZZ	SPF SLIT UPPER PAPER GUIDE	AH
003	00000085	PCLC-0156FCZZ	ELECTROMAGNETIC CLUTCH 22T	AU
003	00000086	NPLYZ0146FCZZ	PULLEY(22MXL)	AB
003	00000087	NBLTH0238FCZZ	SPF BELT(80MXL)	AG
003	00000088	CFRM-0810FC01	SPF FRAME R	AG
003	00000089	LBOSZ1057FCZZ	CLUTCH BOSS B	AC
003	00000090	PPIPP0110FCZZ	PIPE B	AC
003	00000091	MSPRC1316FCZZ	CLUTCH SPRING B	AD
003	00000092	CHLDZ1208FC31	SPF SOLENOID HOLDER UNIT	AT
003	00000093	PSHEP3597FCZZ	SPF-PS FRONT SHEET	AC
003	00000094	XBPSD30P14000	SCREW(M3X14)	AA
003	00000095	PBRSS0139FCZZ	SPF BRUSH 3	AF
003	00000096	PBRSS0138FCZZ	SPF BRUSH 2	AE
003	00000097	PBRSS0135FCZZ	SPF BRUSH	AE
003	00000501	DUNT-6693FCZZ	SPF PAPER FEEDING UNIT	BW
003	00000901	CSOU-0131FC51	SPF UNIT(AB/100V SERIES)	CD
003	00000901	CSOU-0131FC53	SPF UNIT(INCH/100V SERIES)	CD
003	00000901	CSOU-0131FC52	SPF UNIT(AB/200V SERIES)	CD
003	00000901	CSOU-0131FC54	SPF UNIT(INCH/200V SERIES)	CD
004	00000001	CBTN-0185FC01	CLEAR KEY	AF
004	00000002	CBTN-0183FC31	COPY KEY UNIT	AH
004	00000003	HPNLC0219FCZZ	OPERATION PANEL	AU
004	00000004	JBTN-0186FCZZ	BLUE KEY	AC
004	00000005	CBTN-0192FC01	PANEL KEY (SF-2014)	AW
004	00000005	CBTN-0184FC01	PANEL KEY (SF-2114/SF-2214)	AW
004	00000006	CPWBF1052FC52	OPERATION PWB B (SF-2114)	BG
004	00000006	CPWBF1052FC53	OPERATION PWB BF (SF-2214)	BG
004	00000006	CPWBF1052FC51	OPERATION PWB A (SF-2014)	BF

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
004	00000007	XEPSD30P06000	SCREW(M3X6)	AA
004	00000008	DHAI-2309FCZZ	OPERATION MAIN HARNESS	AP
004	00000009	HINDP0504FCZZ	KEY SHEET U B IN(USA,CANADA) (SF-2114	AN
004	00000009	HINDP0500FCZZ	KEY SHEET U BF(AUSTRALIA,U,KINGDOM) (	AN
004	00000009	HINDP0507FCZZ	KEY SHEET BF IN(CANADA AND INCH SERIE	AN
004	00000009	HINDP0506FCZZ	KEY SHEET BF IN(USA,CANADA) (SF-2214)	AN
004	00000009	HINDP0499FCZZ	KEY SHEET J BF(JAPAN ONLY) (SF-2214)	AN
004	00000009	HINDP0501FCZZ	KEY SHEET BF(OTHER COUNTRIES) (SF-221	AN
004	00000009	HINDP0498FCZZ	KEY SHEET B(OTHER COUNTRIES) (SF-2114	AN
004	00000009	HINDP0479FCZZ	KEY SHEET J B(JAPAN ONLY) (SF-2114)	AN
004	00000009	HINDP0478FCZZ	KEY SHEET A(CANADA AND OTHER COUNTRIE	AN
004	00000009	HINDP0477FCZZ	KEY SHEET U A(USA,CANADA,AUSTRALIA,U,	AP
004	00000009	HINDP0476FCZZ	KEY SHEET J A(JAPAN ONLY) (SF-2014)	AP
004	00000009	HINDP0497FCZZ	KEY SHEET U B(AUSTRALIA,U,KINGDOM) (S	AN
004	00000009	HINDP0505FCZZ	KEY SHEET B IN(CANADA AND INCH SERIES	AN
004	00000010	HINDP0472FCZZ	POWER SHEET(JAPAN ONLY)	AD
004	00000010	HINDP0473FCZZ	POWER SHEET(USA,CANADA,AUSTRALIA,U,KI	AD
004	00000010	HINDP0474FCZZ	POWER SHEET(CANADA AND OTHER COUNTRIE	AD
005	00000001	XEBSE40P10000	SCREW(M4X10)	AA
005	00000002	XHBSE40P10000	SCREW(M4X10)	AA
005	00000003	LHLDZ1201FCZZ	INTER LOCK SWITCH SHAFT HOLDER	AE
005	00000004	MSPRC2184FCZZ	INTER LOCK SWITCH SHAFT SPRING	AA
005	00000005	NSFTZ2044FCZZ	INTER LOCK SWITCH SHAFT	AB
005	00000006	LX-WZ0409FCZZ	PG WASHER	AB
005	00000007	LFRM-0800FCZZ	UPPER FRAME F	AP
005	00000008	LDAIU0484FCZZ	TC CONTROL BLOCK	AB
005	00000009	LX-BZ0719FCZZ	SCREW	AA
005	00000010	PFILW0213FCZZ	OZONE FILTER	AV
005	00000011	PDUC-0086FCZZ	UPPER FRAME FAN DUCT	AP
005	00000012	DHAI-2293FC11	AC INTERFACE HARNESS(200V SERIES)	AX
005	00000012	DHAI-2293FC14	AC INTERFACE HARNESS(JAPAN ONLY)	AY
005	00000012	DHAI-2293FCZZ	AC INTERFACE HARNESS(EXPORT..100V SER	AY
005	00000013	CSPRB2177FC31	TORSION BAR UNIT	BA
005	00000014	XHBSE30P30000	SCREW(M3X30)	AA
005	00000015	RMOTE0753FCZZ	VFM	AY
005	00000016	QSW-C9170QCZZ	SEESAW SWITCH	AK
005	00000017	QSW-M0296FCZZ	MICROSWITCH	AM
005	00000018	LPLTM4542FCZZ	UPPER FRAME JOINT PLATE	AR
005	00000019	VHPGP3A100/-1	POD PHOTO SENSOR(GP3A100)	AM
005	00000020	MSPRP2233FCZZ	FUSING PRESSURE SPRING	AE
005	00000021	CPWBF1056FC52	BL PWB AX (SF-2014)	AZ
005	00000021	CPWBF1056FC51	BL PWB B (SF-2114/SF-2214)	AZ
005	00000022	LX-BZ0728FCZZ	SCREW(M3X8)	AA
005	00000023	LHLDZ1198FCZZ	BL HOLDER	AL
005	00000024	CPWBF1057FC51	DL PWB	AY
005	00000025	XHBSE30P06000	SCREW(M3X6)	AA
005	00000026	LDAIU0483FCZZ	DV CONTROL BLOCK	AD
005	00000027	LPLTM4543FCZZ	DV LOWER GUIDE PLATE	AN
005	00000028	PGIDM1486FCZZ	TRANSPORT GUIDE UPPER	AH
005	00000029	MSPRC2183FCZZ	PS ROLLER SPRING	AA
005	00000030	NROLM1022FCZZ	PS UPPER ROLLER	AQ
005	00000031	NBRGP0509FCZZ	PS BEARING	AF
005	00000032	LX-BZ0718FCZZ	SCREW	AA
005	00000033	LBRC-0057FCZZ	MANUAL FEEDING UNIT BRACKET	AY
005	00000034	PTME-0235FCZZ	MANUAL FEEDING UNIT LOCK PAWL	AC
005	00000035	MSPRC2185FCZZ	MANUAL FEEDING UNIT LOCK SPRING	AA
005	00000036	PTME-0236FCZZ	MANUAL FEEDING UNIT LOCK PAWL R	AC
005	00000037	PTME-0233FCZZ	HOOK FRONT	AD
005	00000038	XBPSD30P10KS0	SCREW(M3X10KS)	AB

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
005	00000039	NSFTZ2045FCZZ	HOOK SHAFT	AM
005	00000040	LX-BZ3008SC0B	SCREW(M3X8)	AA
005	00000041	DHAI-2295FCZZ	MANUAL FEEDING INTERFACE HARNESS	AM
005	00000042	MSPRC2182FCZZ	HOCK SPRING	AB
005	00000043	PTME-0234FCZZ	HOCK REAR	AD
005	00000044	CFRM-0801FC03	UPPER FRAME RC(JAPAN ONLY)	AU
005	00000044	CFRM-0801FC02	UPPER FRAME R B(EUROPE,AUSTRALIA,NEW	AU
005	00000044	CFRM-0801FC02	UPPER FRAME R B(ALGERIA,EGYPT,JORDAN,	AU
005	00000044	CFRM-0801FC02	UPPER FRAME R B (KUWAIT)	AU
005	00000044	CFRM-0801FC01	UPPER FRAME R(OTHER COUNTRIES)	AU
005	00000045	NGERH1013FCZZ	GEAR 30T	AC
005	00000046	XRESP70-08000	E TYPE RING(7MM)	AA
005	00000047	XRESP50-06000	E TYPE RING(5MM)	AA
005	00000048	NGERH1006FCZZ	GEAR 33/21T	AD
005	00000049	NGERH1005FCZZ	GEAR 31/23T	AE
005	00000050	RPLU-0301FCZZ	SEPARATOR PAWL SOLENOID	AV
005	00000051	NSFTZ2046FCZZ	DV DRIVE SHAFT	AD
005	00000052	CGERH1014FC01	GEAR 23T	AG
005	00000053	MSPRC2238FCZZ	DV 23T SPRING	AA
005	00000054	LPLTP4548FCZZ	DV DRIVE PLATE	AF
005	00000055	LX-BZ0736FCZZ	SCREW	AB
005	00000056	LX-BZ0187FCZ1	SCREW(M3X8KS)(RED,LEFT TYPE)	AA
005	00000057	DHAI-2296FCZZ	DV INTERFACE HARNESS	AS
005	00000058	XEBSD30P08000	SCREW(M3X8)	AA
005	00000059	DHAI-2311FCZZ	UPPER,LOWER FRAM MAIN HARNESS A(EXPOR	BB
005	00000059	DHAI-2311FC15	UPPER,LOWER FRAM MAIN HARNESS F(JAPAN	BD
005	00000059	DHAI-2311FC14	UPPER,LOWER FRAM MAIN HARNESS E(EXPOR	BC
005	00000059	DHAI-2311FC11	UPPER,LOWER FRAM MAIN HARNESS B(JAPAN	BC
005	00000059	DHAI-2311FC12	UPPER,LOWER FRAM MAIN HARNESS C(EXPOR	BC
005	00000059	DHAI-2311FC13	UPPER,LOWER FRAM MAIN HARNESS D(JAPAN	BD
005	00000060	XBPSD40P10KS0	SCREW(M4X10KS)	AA
005	00000061	DHAI-2292FCZZ	COUNTER INTERFACE HARNESS	AL
005	00000062	CPWBF1051FC51	MAIN PWB	BU
005	00000063	MSPRT0925FCZZ	PF JUM RELEASE SPRING	AB
005	00000064	DHAI-2309FCZZ	OPERATION MAIN HARNESS	AP
005	00000065	XHSSD30P06000	SCREW(M3X6)	AA
005	00000066	PSHEP3697FCZZ	SWITCH COVER SHEET	AG
005	00000067	LX-WZ0052FCZ1	WASHER	AA
005	00000068	XEBSD30P10000	SCREW(M3X10)	AA
005	00000069	LBNDJ0043FCZ1	SNAP BAND	AA
005	00000070	PSHEP3698FCZZ	DV LOWER GUIDE SHEET	AE
005	00000071	LHLDW7008XCZZ	WIRE HOLDER(LWS-1S)	AB
005	00000072	XHBSE40P08000	SCREW(M4X8)	AA
005	00000073	LX-WZ0410FCZZ	DRUM BOSS WASHER(M7)(JAPAN ONLY)	AB
005	00000073	LX-WZ0411FCZZ	DRUM BOSS WASHER(M8)(EUROPE,AUSTRALIA	AB
005	00000073	LX-WZ0411FCZZ	DRUM BOSS WASHER(M8)(WEST AFRICA,ALGE	AB
005	00000073	LX-WZ0411FCZZ	DRUM BOSS WASHER (M8)(KATAR,UAE,BAHRA	AB
005	00000073	LX-WZ0412FCZZ	DRUM BOSS WASHER(M9)(OTHER COUNTRIES)	AB
005	00000074	PSHEP3727FCZZ	TC BLOCK SHEET	AA
005	00000075	LX-BZ0583FCZZ	SCREW(JAPAN ONLY)	AB
005	00000075	XHBS230P10000	SCREW(M3X10)(BLUE)(EXPORT)	AA
005	00000076	LBSHC0164FCZ1	EADGE BUSHING(200V SERIES)	AA
006	00000001	PCOVP1229FCZZ	DRAK BOX COVER (SF-2114/SF-2214)	AN
006	00000001	PCOVP1230FCZZ	DRAK BOX COVER (SF-2014)	AN
006	00000002	PGIDM1495FCZZ	OC HINGE GUIDE LEFT	AE
006	00000003	RMOTE0754FCZZ	CFM	AY
006	00000004	PDUC-0087FCZZ	CFM DUCT	AG
006	00000005	PSHEZ3587FCZZ	INSULATOR SHEET	AG
006	00000006	PGIDM1496FCZZ	OC HINGE GUIDE RIGHT	AE

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
006	00000007	LHLDZ1182FCZZ	AE HOLDER	AE
006	00000008	CPWBF1058FC31	AE PWB	AR
006	00000009	XEPSD30P06000	SCREW(M3X6)	AA
006	00000010	XBBSD40P10000	SCREW(M4X10)	AA
006	00000011	VHPGP3A38//-1	PHOTO TRANSISTOR(GP3A38)(LHPD) (SF-21	AH
006	00000012	LFIX-0284FCZZ	4TH 5TH MIRROR FIXING PLATE F	AC
006	00000013	XBPSD30P04K00	SCREW(M3X4K)	AA
006	00000014	NSFTZ2074FCZZ	LENS DRIVE PULLEY SHAFT (SF-2114/SF-2	AD
006	00000015	NPLYZ0291FCZZ	LENS DRIVE PULLEY (SF-2114/SF-2214)	AG
006	00000016	MCAMP0092FCZZ	4/5 MAGNIFICATION RATIO CHANGING CAM	AD
006	00000017	LX-BZ0586FCZZ	SCREW (SF-2114/SF-2214)	AA
006	00000018	XBPSD30P06KS0	SCREW(M3X6KS) (SF-2114/SF-2214)	AA
006	00000019	VHPGP1A22LC-1	PHOTO SENSOR(GP1A22LC)(MHPD)	AK
006	00000020	LX-BZ0353FCZZ	SCREW(M4X6)(BLACK)	AA
006	00000021	PGIDM1494FCZZ	LENS GUIDE (SF-2114/SF-2214)	AE
006	00000022	PRNGP0025FCZZ	G TYPE RING(GTW-5) (SF-2114/SF-2214)	AA
006	00000023	NPLYZ0154FCZZ	L PULLEY (SF-2114/SF-2214)	AA
006	00000024	LX-BZ0733FCZZ	SCREW (SF-2114/SF-2214)	AB
006	00000025	XBBSD40P06000	SCREW(M4X6)	AA
006	00000026	XBPSD40P06K00	SCREW(M4X6K)	AA
006	00000027	CPLTM4599FC01	PULLEY FIXING PLATE	AE
006	00000028	NPLYZ0292FCZZ	PULLEY	AH
006	00000029	NPLYZ0154FCZZ	L PULLEY	AA
006	00000030	PRNGP0025FCZZ	G TYPE RING(GTW-5)	AA
006	00000031	XHSSD30P06000	SCREW(M3X6)	AA
006	00000032	LFIX-0479FCZZ	FILTER FIXER	AA
006	00000033	PSHEZ3588FCZZ	6TH SHIELD SHEET	AB
006	00000034	PSHEZ3589FCZZ	6TH REFLECT PREVENTION SHEET F	AA
006	00000035	LRALM0116FCZZ	MB-B RAIL	AE
006	00000036	LX-BZ0335FCZZ	SCREW(M4X6)(RED)	AA
006	00000037	PMLT-0938FCZZ	DUCT CUSHION	AD
006	00000038	XBPSD40P40XS0	SCREW(M4X40XS) (SF-2014)	AA
006	00000039	CR-WZ0444FC01	DRY HEATER(EXPORT..100V SERIES)	AV
006	00000039	CR-WZ0445FC01	DRY HEATER(200V SERIES)	AV
006	00000039	CR-WZ0443FC01	DRY HEATER(JAPAN ONLY)	AV
006	00000040	PMIR-0116FCZZ	6TH MIRROR	AQ
006	00000041	LX-BZ0637FCZZ	SCREW(RED)	AC
006	00000042	PSHEZ3709FCZZ	OPTICAL SHIELD SHEET	AB
006	00000043	DHAI-2300FCZZ	OPTICAL BASE PLATE HARNESS(JAPAN ONLY	AP
006	00000043	DHAI-2300FC11	OPTICAL BASE PLATE HARNESS B(EXPORT..	AN
006	00000043	DHAI-2300FC12	OPTICAL BASE PLATE HARNESS C(200V SER	AN
006	00000044	XRESP70-08000	E TYPE RING	AA
006	00000045	NPLYZ0172FCZ1	WINDER PULLEY	AL
006	00000046	LX-BZ0324FCZZ	SCREW(M3X4)	AA
006	00000047	LX-BZ0049FCZZ	SCREW(M4X6)	AB
006	00000048	NGERH0998FCZZ	WINDING DRIVE SHAFT GEAR	AE
006	00000049	NSFTZ2056FCZZ	WINDING DRIVE SHAFT	AM
006	00000050	NBRGC0504FCZZ	BEARING(F8X12X5 16X)	AC
006	00000051	CDAIU0486FC01	OPTICAL BASE PLATE	BE
006	00000052	LX-WZ0050FCZ1	WASHER(M4)	AA
006	00000053	XWHSD40-08000	WASHER(M4)	AA
006	00000054	XNESF40-32000	NUT(M4)	AA
006	00000055	RMOTP0749FCZZ	LENS DRIVE MOTOR (SF-2114/SF-2214)	AW
006	00000056	LPLTM4562FCZZ	LENS DRIVE SHAFT FIXING PLATE	AA
006	00000057	LPLTM4563FCZZ	MIRROR MOTOR FIXING PLATE	AE
006	00000058	RMOTP0750FCZZ	MIRROR MOTOR	AY
006	00000059	NBRGC0387FCZ1	BEARING	AC
006	00000060	XRESP50-06000	E TYPE RING	AA
006	00000061	XEBSD30P06000	SCREW(M3X6) (SF-2214)	AA

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
006	00000062	PDUC-0088FCZZ	DUCT (SF-2214)	AM
006	00000063	PDUC-0089FCZZ	JOINT DUCT (SF-2214)	AG
006	00000064	NFANS0041FCZZ	FAN (SF-2214)	BD
006	00000065	LPLTM4595FCZZ	FAN FIXING PLATE (SF-2214)	AF
006	00000066	XBPSD40P08000	SCREW(M4X8) (SF-2214)	AA
006	00000067	XHBSE40P06000	SCREW(M4X6) (SF-2214)	AA
006	00000068	PSHEZ3590FCZZ	6TH REFLECT PREVENTION SHEET R	AA
006	00000069	PGUMS0249FCZZ	TABLE GLASS RUBBER	AB
006	00000070	LPLTM4747FCZZ	GLASS FIXING PLATE	AE
006	00000071	CR-WZ0446FC01	DRY HEATER(JAPAN ONLY)	AV
006	00000072	XBPSD40P06K00	SCREW(M4X6K)(JAPAN ONLY)	AA
006	00000073	TCAUH0933FCZZ	HT CAUTION LABEL(FOR EUROPE)	AB
006	00000074	PSHEP3691FCZZ	OC HINGE GUIDE RIGHT SHEET	AC
006	00000075	MSPRC1941FCZ1	SPRING (SF-2214)	AA
006	00000076	LSTPF0308FCZZ	SPF HINGE STOPPER (SF-2214)	AC
006	00000077	LX-BZ0741FCZZ	SCREW (SF-2214)	AB
006	00000078	XWHSD30-08100	WASHER (SF-2214)	AA
006	00000079	XEBSD30P10000	SCREW(M3X10) (SF-2214)	AA
006	00000080	LBNDJ0013FCZZ	WIRE BAND	AA
006	00000081	PWIR-0168FCZZ	MB WIRE	AQ
006	00000082	NSFTZ2057FCZZ	4TH,5TH DRIVE SHAFT	AE
006	00000083	MSPRC2265FCZZ	MB SPRING	AB
006	00000084	CHLDZ1187FC32	4TH 5TH MIRROR HOLDER UNIT B (SF-2114	BD
006	00000084	CHLDZ1187FC31	4TH 5TH MIRROR HOLDER UNIT A (SF-2014	BC
006	00000085	CREFL0150FC31	LIGHT SOURCE UNIT(100V SERIES)	BP
006	00000085	CREFL0150FC32	LIGHT SOURCE UNIT(200V SERIES)	BP
006	00000086	LPLTM4564FCZZ	WIRE FIXING PLATE	AA
006	00000087	CHLDZ1184FC31	2ND 3RD MIRROR HOLDER UNIT	BE
006	00000088	MSPRT2272FCZZ	LENS DRIVE SPRING (SF-2114/SF-2214)	AB
006	00000089	PWIR-0167FCZZ	LENS DRIVE WIRE (SF-2114/SF-2214)	AP
006	00000090	NSFTZ2055FCZZ	LENS DRIVE SHAFT A (SF-2114/SF-2214)	AF
006	00000091	PSHEP2335FCZZ	SHIELD SHEET (SF-2114/SF-2214)	AA
006	00000092	PSHEP3594FCZZ	LENS LEFT SHEET (SF-2114/SF-2214)	AC
006	00000093	CLNS-0050FC32	LENS UNIT (SF-2014)	BE
006	00000093	CLNS-0050FC31	LENS UNIT (SF-2114/SF-2214)	BE
006	00000094	PSHEP3595FCZZ	LENS RIGHT SHEET (SF-2114/SF-2214)	AC
006	00000095	LSTPP0279FCZZ	STOPPER (SF-2114/SF-2214)	AB
006	00000096	NSFTZ2057FCZZ	4TH,5TH DRIVE SHAFT (SF-2114/SF-2214)	AE
006	00000097	LHLDZ1189FCZZ	LENS CARRIAGE A (SF-2114/SF-2214)	AX
006	00000098	PSHEP3715FCZZ	LENS UPPER SHEET (SF-2114/SF-2214)	AD
006	00000099	PSHEZ3714FCZZ	LENS SHIELD SHEET (SF-2114/SF-2214)	AE
006	00000100	XBPSD40P08KS0	SCREW(M4X8KS) (SF-2014)	AA
006	00000101	LHLDW1225FCZZ	MINI CLAMP(YMC15)	AB
006	00000102	PSHEZ3710FCZZ	DARK BOX REFLECTOR SHEET	AN
006	00000103	XEPSD40P30000	SCREW(M4X30)	AA
006	00000104	MLOV-0005FCZZ	CFM LOUVER	AF
006	00000105	XEPSD40P08000	SCREW(M4X8)	AA
006	00000106	XBPBZ40P06K00	SCREW(M4X6K)	AA
007	00000001	XBPSD30P04K00	SCREW(M3X4K)	AA
007	00000002	LFIX-0467FCZZ	2ND MIRROR FIXING PLATE	AC
007	00000003	XRESP70-08000	E TYPE RING(7MM)	AA
007	00000004	NPLYZ0276FCZZ	W PULLEY	AG
007	00000005	LX-BZ0707FCZZ	SCREW	AA
007	00000006	CSLI-0057FC32	SLIDER UNIT(4PCS/SET)	AF
007	00000007	PCUSS0201FCZZ	MB-B CUSHION	AA
007	00000008	PMIR-0118FCZZ	2ND MIRROR	AR
007	00000009	PMIR-0119FCZZ	3RD MIRROR	AV
007	00000010	LFIX-0284FCZZ	2ND MIRROR FIXING PLATE	AC
007	00000011	XBPSD30P06K00	SCREW(M3X6K)	AA

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
007	00000012	PGIDM1539FCZZ	CL GUIDE	AC
007	00000013	PSHEP3713FCZZ	2ND MIRROR SHEET	AB
007	00000021	LFIX-0284FCZZ	4TH 5TH MIRROR HOLDER F	AC
007	00000022	PMIR-0120FCZZ	4TH MIRROR	AT
007	00000023	PMIR-0121FCZZ	5TH MIRROR	AQ
007	00000024	XNESD40-32000	NUT(M4)	AA
007	00000025	XWHSD40-08000	WASHER(M4)	AA
007	00000026	LX-WZ0050FCZ1	WASHER(M4)	AA
007	00000027	PCLR-0392FCZZ	COLLAR	AB
007	00000028	LX-BZ0725FCZZ	SCREW	AB
007	00000029	LHLDZ1187FCZZ	4TH 5TH MIRROR HOLDER	AK
007	00000030	LHLDZ1188FCZZ	4TH 5TH DRIVE HOLDER	AF
007	00000031	XBPSD40P06000	SCREW(M4X6)	AA
007	00000032	PSHEZ3591FCZZ	4TH 5TH SHIELD SHEET F	AA
007	00000033	PSHEZ3592FCZZ	4TH 5TH SHIELD SHEET R	AB
007	00000034	LPLTP4569FCZZ	4/5 MAGNIFICATION RATIO CHANGING HOLD	AE
007	00000035	XBPSD40P06000	SCREW(M4X6) (SF-2114/SF-2214)	AA
007	00000501	CHLDZ1184FC31	2ND 3RD MIRROR HOLDER UNIT	BE
007	00000502	CHLDZ1187FC31	4TH 5TH MIRROR HOLDER UNIT A (SF-2014	BC
007	00000502	CHLDZ1187FC32	4TH 5TH MIRROR HOLDER UNIT B (SF-2114	BD
008	00000001	LPLTM4718FCZZ	CONTROL PLATE F/R	AD
008	00000002	LPLTM4717FCZZ	CONTROL PLATE C	AE
008	00000003	LFIX-0437FCZZ	LAMP CONTACT FIXING PLATE	AB
008	00000004	MSPRP2260FCZZ	LAMP SPRING F	AE
008	00000005	RLMPU0536FCZZ	COPY LAMP(100V SERIES)	BC
008	00000005	RLMPU0537FCZZ	COPY LAMP(200V SERIES)	BC
008	00000006	PREFL0150FCZZ	MAIN REFLECTOR	AY
008	00000007	LDAIU0500FCZZ	LAMP SPRING BASE F	AK
008	00000008	CSLI-0057FC32	SLIDER UNIT(4PCS/SET)	AF
008	00000009	LPLTM4712FCZZ	SIDE PLATE F	AD
008	00000010	LPLTM4714FCZZ	TERMINAL PLATE	AE
008	00000011	CFS-T0098FC31	TEMPERATURE FUSE	AT
008	00000012	LDAIU0502FCZZ	TEMPERATURE FUSE BASE	AK
008	00000013	DHAI-2374FCZZ	OPTICAL HARNESS	AM
008	00000014	MSPRP2261FCZZ	LAMP SPRING R	AG
008	00000015	LDAIU0501FCZZ	LAMP SPRING BASE R	AH
008	00000016	LPLTM4713FCZZ	SIDE PLATE R	AD
008	00000017	PMIR-0126FCZZ	1ST MIRROR	AX
008	00000018	PSHEZ3685FCZZ	SUB REFLECTOR	AK
008	00000019	PCUSU0203FCZZ	CUSHION	AE
008	00000020	MSPRP2101FCZZ	MIRROR SPRING	AC
008	00000021	LDAIU0499FCZZ	BASE PLATE	AS
008	00000022	LPLTM4716FCZZ	WIRE FIXING PLATE R	AE
008	00000023	LPLTM4715FCZZ	WIRE FIXING PLATE F	AE
008	00000024	DHAI-2375FCZZ	CL HARNESS	AY
008	00000025	PSHEZ3686FCZZ	INSULATOR SHEET	AH
008	00000026	XHBSD30P06000	SCREW(M3X6)	AA
008	00000027	XHPSD30P06000	SCREW(M3X6)	AA
008	00000028	XHPSD30P14000	SCREW(M3X14)	AA
008	00000029	XBPSD30P05000	SCREW(M3X5)	AA
008	00000030	XJPSD30P05000	SCREW(M3X5)	AA
008	00000031	XBPBZ40P06K00	SCREW(M4X6K)	AA
008	00000901	CREFL0150FC31	LIGHT SOURCE UNIT(100V SERIES)	BP
008	00000901	CREFL0150FC32	LIGHT SOURCE UNIT(200V SERIES)	BP
009	00000001	PSEL-0621FCZZ	COVER 2 SEAL R	AA
009	00000002	PSEL-0619FCZZ	COVER 2 SEAL	AB
009	00000003	PCOVP1233FCZZ	COVER 2	AK
009	00000004	UCLEZ0132FCZZ	BLADE	AF
009	00000005	PSEL-0620FCZZ	COVER 2 SEAL F	AA

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
009	00000006	LPLTM4581FCZZ	DOCTOR SUPPORT PLATE	AN
009	00000007	LPLTM4578FCZZ	DOCTOR	AH
009	00000008	PSEL-0584FCZZ	DOCTOR SEAL R	AA
009	00000009	PSEL-0583FCZZ	DOCTOR SEAL F	AA
009	00000010	DHAI-2305FCZZ	DV HARNESS BLACK	AN
009	00000011	LPLTP4579FCZZ	DRIVE ASSISTANCE PLATE	AD
009	00000012	NGERH1001FCZZ	STIR GEAR 2	AC
009	00000013	NBRGC0522FCZZ	BEARING	AC
009	00000014	CGERH0999FC01	IDLE GEAR	AF
009	00000015	NGERH1000FCZZ	STIR GEAR	AC
009	00000016	NGERH0750FCZZ	GEAR DV1	AC
009	00000017	CCLR-0394FC01	D COLLAR	AF
009	00000018	NBRGC0136FCZ1	BEARING(M6)	AC
009	00000019	PRNGP0050FCZZ	V RING(M6)	AE
009	00000020	NROLM1020FCZZ	MG ROLLER	BB
009	00000021	PSHEP3600FCZZ	ATC COVER SHEET	AC
009	00000022	RDTCT0109FCZZ	ATC	AY
009	00000023	PSEL-0589FCZZ	MG SEAL R	AB
009	00000024	CBOX-0096FC01	DV BOX	AX
009	00000025	PSEL-0588FCZZ	MG SEAL F	AB
009	00000026	LHLDZ1195FCZZ	HOLDER M	AB
009	00000027	LPLTP4580FCZZ	MG ADJUSTING PLATE	AC
009	00000028	PSHT-0062FCZZ	SHUTTER	AC
009	00000029	MSPRC2223FCZZ	OPEN AND SHUT SPRING	AA
009	00000030	PPIPP0176FCZZ	DISCHARGE PIPE	AC
009	00000031	PRNGP0005GCZZ	V RING(M5)	AD
009	00000032	NROLP1036FCZZ	STIR ROLLER	AR
009	00000033	NROLP1019FCZZ	ROLLER	AQ
009	00000034	NSRW-0019FCZZ	SCREW L	AP
009	00000035	NSRW-0020FCZZ	SCREW R	AP
009	00000036	PSEL-0585FCZZ	BOX SEAL F	AB
009	00000037	PSEL-0587FCZZ	BOX SEAL R	AA
009	00000038	PCOVP1232FCZZ	COVER	AN
009	00000039	PSEL-0600FCZZ	COVER SEAL LR	AC
009	00000040	PSEL-0601FCZZ	COVER SEAL F	AB
009	00000041	PSEL-0602FCZZ	COVER SEAL R	AB
009	00000042	PSEL-0586FCZZ	BOX SEAL C	AA
009	00000043	PSEL-0603FCZZ	BOX SEAL B	AB
009	00000044	LPLTM3773FCZZ	PLATE MFE	AC
009	00000045	XRESP30-06000	E TYPE RING(3MM)	AA
009	00000046	MSPRC2188FCZZ	DV PRESSURE SPRING	AB
009	00000047	CPLTM4740FC01	DV SAPARATOR PLATE N	AD
009	00000048	LPLTM4739FCZZ	DV JOINT PLATE N	AE
009	00000049	CPLTM4546FC01	DV SEPARATOR FIXING PLATE	AH
009	00000050	XWHSD40-08000	WASHER	AA
009	00000051	LPLTP4601FCZZ	SEPARATOR PLATE	AC
009	00000052	XRESP50-06000	E TYPE RING(5MM)	AA
009	00000053	XRESP40-06000	4E-TYPE RING(4MM)	AA
009	00000054	XUBUZ30P08000	SCREW(M3X8)	AA
009	00000055	CBOX-0097FC51	TONER HOPPER UNIT	BE
009	00000056	XBBSD40P06000	SCREW(M4X6)	AA
009	00000057	XEBS230P12000	SCREW(M3X12)(BLUE)	AA
009	00000058	XEBSD30P08000	SCREW(M3X8)	AA
009	00000059	LX-BZ3006SC0S	SCREW(M3X6)	AA
009	00000060	XBPSD30P08KS0	SCREW(M3X8KS)	AA
009	00000061	XWHSD30-05080	WASHER(3W)	AA
009	00000062	XEBSD30P05000	SCREW(M3X5)	AA
009	00000064	XBBSD30P06000	SCREW(M3X6)	AA
009	00000065	PSEL-0627FCZZ	COVER SEAL FA	AC

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
009	00000066	PSEL-0628FCZZ	COVER SEAL RA	AE
009	00000067	NGERH1026FCZZ	STIR GEAR 2N	AC
009	00000068	PSEL-0624FCZZ	AG SEAL	AB
009	00000069	PSEL-0625FCZZ	MG SEAL FA	AB
009	00000070	PSEL-0626FCZZ	MG SEAL RA	AB
009	00000071	CPLTM4748FC01	MG SHEET FIXING PLATE	AV
009	00000072	LX-BZ0529FCZZ	SCREW	AA
009	00000073	XWHSD30-05070	WASHER	AA
009	00000074	XEBS230P08000	SCREW(M3X8)(BLUE)	AA
009	00000901	CBOX-0096FC51	DV BOX UNIT BLACK	BU
010	00000001	CBRC-0059FC01	TONER BRACKET B	AK
010	00000002	PCOVP1234FCZZ	TONER COVER	AE
010	00000003	XBBSD30P08000	SCREW(M3X8)	AA
010	00000004	PSEL-0594FCZZ	JOINT SEAL B	AC
010	00000005	XRESP40-06000	4E-TYPE RING(4MM)	AA
010	00000006	NSFTZ2066FCZZ	ROTATION FULCRUM SHAFT B	AB
010	00000007	NGERH1024FCZZ	7T GEAR	AE
010	00000008	LHLDZ1197FCZZ	TONER HOLDER	AG
010	00000009	PSHT-0064FCZZ	SHUTTER	AE
010	00000010	NSFTZ2065FCZZ	ROTATION FULCRUM SHAFT	AD
010	00000011	NGERH1002FCZZ	32T GEAR	AE
010	00000012	LX-BZ0727FCZZ	SCREW(M3)	AC
010	00000013	NGERH0240FCZZ	GEAR 16T(A2-16-1)	AB
010	00000014	PBOX-0097FCZZ	TONER HOPPER	AH
010	00000015	NGERH0143FCZZ	CLEANER DRIVE GEAR 14T	AC
010	00000016	NBRGC0523FCZZ	BEARING	AD
010	00000017	CSRW-0022FC51	SCREW UNIT	AN
010	00000018	NBRGP0299FCZZ	DV BEARING(M5)	AC
010	00000019	XEBSD30P08000	SCREW(M3X8)	AA
010	00000020	RMOTD0751FCZZ	TONNER MOTOR	AX
010	00000021	NGERH0486FCZZ	DV GEAR 29T	AB
010	00000022	NSFTZ2043FCZZ	TONER SHAFT	AD
010	00000023	NGERH1003FCZZ	11T GEAR	AD
010	00000024	NGERH1004FCZZ	TONER GEAR 16T	AC
010	00000025	PRNGP0025FCZZ	G RING(GTW-5)	AA
010	00000026	PSEL-0596FCZZ	TONER HOPPER SEAL C	AA
010	00000027	TLABZ3582FCZZ	GREEN 91 LABEL	AB
010	00000028	LX-WZ0405FCZZ	SHEET RING 3.5	AB
010	00000029	LX-BZ0734FCZZ	SCREW	AB
010	00000030	XEBSD30P12000	SCREW(M3X12)	AA
010	00000031	DHAI-2329FCZZ	EARTH WIRE	AD
010	00000032	NGERH1003FCZ1	11T GEAR	AD
010	00000033	LX-BZ0747FCZZ	SCREW(M4)	AB
010	00000901	CBOX-0097FC51	TONER HOPPER UNIT	BE
011	00000001	XHBSD30P06000	SCREW(M3X6)	AA
011	00000002	TCAUH0878FCZZ	HT CAUTION LABEL(JAPAN ONLY)	AC
011	00000002	TCAUH0879FCZZ	HT CAUTION LABEL(USA,U,KINGDOM,AUSTRA	AC
011	00000002	TCAUH0931FCZZ	HT CAUTION LABEL(OTHER COUNTRIES)	AB
011	00000003	PCOVQ1231FCZZ	FUSING COVER	AW
011	00000004	MSPRT1324FCZZ	DELIVERY ROLLER SPRING REAR	AA
011	00000005	NROLP0790FCZZ	ROLLER	AB
011	00000006	PTME-0168FCZZ	UPPER SEPARATOR PAWL	AH
011	00000007	MSPRT2209FCZZ	SEPARATOR PAWL SPRING	AA
011	00000008	PBRSS0134FCZZ	DISCHARGE BRUSH	AG
011	00000009	LHLDZ1191FCZZ	LAMP HOLDER	AC
011	00000010	XWHSD30-05080	WASHER(3W)	AA
011	00000011	XHBSD30P10000	SCREW(M3X10)	AA
011	00000012	RDTCT0110FCZZ	THERMISTOR	AP
011	00000013	LFRM-0808FCZZ	FUSING UPPER FRAME	AP

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
011	00000014	XEBSD30P08000	SCREW(M3X8)	AA
011	00000015	PGIDH1498FCZZ	FUSING FRONT UPPER GUIDE	AF
011	00000016	MSPRT2210FCZZ	FUSING FRONT PAPER GUIDE SPRING	AA
011	00000017	LDAIU0488FCZZ	PAPER GUIDE BLOCK R	AB
011	00000018	PGIDH1497FCZZ	FUSING FRONT PAPER GUIDE	AF
011	00000019	LDAIU0487FCZZ	PAPER GUIDE BLOCK F	AB
011	00000020	LSTPF0172FCZZ	ROLLER STOPPER	AA
011	00000021	NGERH0443FCZ1	GEAR 48T	AD
011	00000022	LX-BZ0342FCZZ	SCREW	AB
011	00000023	CBRGP0528FC01	FUSING BEARING R	AM
011	00000024	NROLT1031FCZZ	UPPER HEAT ROLLER	BC
011	00000025	RLMPU0535FCZZ	HEATER LAMP(240V)	BC
011	00000025	RLMPU0530FCZZ	HEATER LAMP(100V)	BC
011	00000025	RLMPU0531FCZZ	HEATER LAMP(110V)	BC
011	00000025	RLMPU0532FCZZ	HEATER LAMP(120V)	BC
011	00000025	RLMPU0533FCZZ	HEATER LAMP(127V)	BC
011	00000025	RLMPU0543FCZZ	HEATER LAMP(230V..EUROPE)	BC
011	00000025	RLMPU0534FCZZ	HEATER LAMP(220V)	BC
011	00000026	XHBSD30P04000	SCREW(M3X4)	AA
011	00000027	RTHM-0009FCZZ	THERMOSTAT(EXPORT)	AK
011	00000027	RTHM-0014FCZZ	THERMOSTAT(JAPAN ONLY)	AM
011	00000030	MSPRP2263FCZZ	DELIVERY PAPER GUIDE PLATE SPRING	AB
011	00000032	LBSHC0310FCZZ	FUSING EDGE BUSH	AA
011	00000033	CBRGP0525FC01	FUSING BEARING F	AM
011	00000034	PTUBG0100FCZZ	HL HARNESS PROTECT TUBE(200V SERIES)	AC
011	00000901	CFRM-0808FC59	FUSING UPPER UNIT(230V..EUROPE)	BS
011	00000901	CFRM-0808FC58	FUSING UPPER UNIT(240V..OTHER COUNTRI	BS
011	00000901	CFRM-0808FC57	FUSING UPPER UNIT(240V..AUSTRALIA ONL	BS
011	00000901	CFRM-0808FC56	FUSING UPPER UNIT(220V)	BS
011	00000901	CFRM-0808FC60	FUSING UPPER UNIT(230V..U,KINGDOM)	BS
011	00000901	CFRM-0808FC54	FUSING UPPER UNIT(120V..OTHER COUNTRI	BS
011	00000901	CFRM-0808FC53	FUSING UPPER UNIT(120V..USA ONLY)	BS
011	00000901	CFRM-0808FC52	FUSING UPPER UNIT(110V)	BS
011	00000901	CFRM-0808FC51	FUSING UPPER UNIT(100V)	BS
011	00000901	CFRM-0808FC55	FUSING UPPER UNIT(127V)	BS
012	00000001	NGERH1009FCZZ	GEAR 35/20T	AD
012	00000002	NGERH1008FCZZ	GEAR 59/24T	AD
012	00000003	NGERH1007FCZZ	GEAR 68/21T	AD
012	00000004	XRESP70-08000	E TYPE RING	AA
012	00000005	NGERH1010FCZZ	GEAR 76/23T	AD
012	00000006	NGERH1013FCZZ	GEAR 30T	AC
012	00000007	NBRGC0319FCZ1	BEARING	AC
012	00000008	PRNGP0022FCZZ	C RING(M8)	AA
012	00000009	NGERH1011FCZZ	GEAR 28/22T	AD
012	00000010	LPINS0263FCZ1	T TYPE PIN	AA
012	00000011	PCLC-0230FCZZ	TRANSPORT CLUTCH	AY
012	00000012	CPLTM4547FC01	MAIN DRIVE FIXIG PLATE A	AP
012	00000013	RMOTP0747FCZZ	MAIN MOTOR	BM
012	00000014	XBPSD40P14K00	SCREW(M4X14K)	AA
012	00000016	PCUSS0317FCZZ	SEPARATOR CUSHION	AA
013	00000001	XHBSE40P10000	SCREW(M4X10)	AA
013	00000002	LX-BZ0268FCZZ	SCREW	AB
013	00000003	XEBSE40P12000	SCREW(4X12)	AA
013	00000004	PGIDM1487FCZZ	CRU INSERT GUIDE	AE
013	00000005	XHBSE30P08000	SCREW(M3X8)	AA
013	00000006	MSPRC2264FCZZ	CL ROLLER SPRING	AC
013	00000007	MSPRC2270FCZZ	PRESSURE SPRING(EXPORT)	AB
013	00000007	MSPRC2269FCZZ	PRESSURE SPRING(JAPAN ONLY)	AB
013	00000008	MLEVF0656FCZZ	PRESSURE LEVER F	AC

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
013	00000009	XRESP50-06000	E TYPE RING	AA
013	00000010	NBRGY0513FCZZ	PRESSURE ROLLER BEARING	AK
013	00000011	NROLI1028FCZZ	PRESSURE ROLLER	AZ
013	00000012	XHBSE40P14000	SCREW(M4X14)	AA
013	00000013	CPLTM4551FC01	PRESSURE LEVER FIXING PLATE	AE
013	00000014	XHBSE40P06000	SCREW(M4X6)	AA
013	00000015	MLEVF0657FCZZ	PRESSURE LEVER R	AC
013	00000017	CROLN1026FC31	LOWER CL ROLLER UNIT	AU
013	00000018	NSFTZ2078FCZZ	LOWER CL ROLLER SHAFT	AF
013	00000019	NROLR1027FCZZ	DELIVERY ROLLER	AL
013	00000020	NBRGC0188FCZZ	PF BEARING	AB
013	00000021	PGIDH1488FCZZ	DELIVERY PAPER GUIDE	AG
013	00000022	LPINS0133FCZZ	PIN(M2-10)	AA
013	00000023	NGERH0866FCZZ	GEAR (22T)	AC
013	00000024	LPLTM4746FCZZ	SCRAPER	AN
013	00000025	NBRGC0504FCZZ	BEARING(F8X12X5 16X)	AC
013	00000026	LX-WZ0042FCZ1	WASHER	AA
013	00000027	PCLC-0235FCZZ	PS CLUTCH	AW
013	00000028	NGERH1015FCZZ	PS JOINT GEAR 25T	AD
013	00000029	MARMP0184FCZZ	PS JOINT ARM	AD
013	00000030	XRESP40-05000	E TYPE RING	AA
013	00000031	MSPRP1213FCZZ	TRANSFER GUIDE SPRING	AA
013	00000032	NROLR1023FCZZ	PS LOWER ROLLER	AU
013	00000033	NBRGP0510FCZZ	ROLLER BEARING	AC
013	00000034	NPLYZ0254FCZZ	DRIVE PULLEY(MXL24T)	AD
013	00000035	LPINS0155FCZZ	PIN(M3X10)	AA
013	00000036	MSPRC2230FCZZ	TC PRESSURE SPRING	AA
013	00000037	PSHEP3580FCZZ	PS ROLLER LOWER SHEET	AD
013	00000038	CROLR1052FC31	REVERSING ROLLER UNIT	AV
013	00000039	MARMP0183FCZZ	SEPARATOR ROLLER RELEASE ARM	AE
013	00000040	MSPRC2189FCZZ	SEPARATOR ROLLER PRESSURE SPRING	AA
013	00000041	PCUSS0302FCZZ	RELEASE ARM CUSHION	AA
013	00000042	NBLTH0234FCZZ	BELT(160MXL 6.4)	AL
013	00000043	CFRM-0805FC51	250 CASSETTE PAPER FEEDING UNIT	BM
013	00000044	LPLTM4549FCZZ	BASE PLATE REINFORCE PLATE	AT
013	00000045	GDAI-0164FCZ1	LOWER FRAME BASE PLATE	BG
013	00000046	XEPSD30P20000	SCREW(M3X20)	AA
013	00000048	CHLDZ1202FC51	SOCKET HOLDER UNIT	BL
013	00000049	LHLDZ1203FCZZ	POWER SUPPLY PWB HOLDER	AL
013	00000050	CPWBF1053FC51	AC CIRCUIT PWB(JAPAN ONLY)	BK
013	00000050	CPWBF1053FC52	AC CIRCUIT PWB(EXPORT..100V SERIES)	BK
013	00000050	CPWBF1053FC53	AC CIRCUIT PWB(200V SERIES)	BN
013	00000051	XBPBZ40P06K00	SCREW(M4X6K)	AA
013	00000052	DHAI-2314FCZZ	AC HARNESS A	AT
013	00000053	PSHEP3603FCZZ	AC PWB PROTECT SHEET(200V SERIES)	AL
013	00000054	RTRNP0491FCZZ	POWER TRANSFORMER(127V)	BD
013	00000054	RTRNP0493FCZZ	POWER TRANSFORMER(240V)	BD
013	00000054	RTRNP0492FCZZ	POWER TRANSFORMER(220V/240V..U,KINGDO	BD
013	00000054	RTRNP0489FCZZ	POWER TRANSFORMER(110V)	BD
013	00000054	RTRNP0488FCZZ	POWER TRANSFORMER(100V)	BD
013	00000054	RTRNP0490FCZZ	POWER TRANSFORMER(120V)	BD
013	00000055	CPWBF1055FC51	LOWER UNIT PWB (SF-2014)	BG
013	00000055	CPWBF1055FC52	LOWER UNIT PWB (SF-2114/SF-2214)	BH
013	00000056	LSUPP0080FCZZ	SUPPORTER(MPS-12-0)	AA
013	00000057	LSUPP0061FCZZ	PWB SUPPORTER(SPLS-7) (SF-2014)	AB
013	00000058	NGERH0394FCZZ	GEAR 24T	AB
013	00000059	PRNGP0022FCZZ	C RING(G-8)	AA
013	00000060	CGERH0113FC01	DV DRIVE GEAR 27/42T	AG
013	00000061	CARMM0189FC01	FUSING JOINT ARM	AE

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
013	00000062	NGERH1027FCZZ	GEAR 22T	AC
013	00000063	QACCB7623QCZZ	AC CORD (U,KINGDOM,GUYANA,CYPRUS,MALA	AQ
013	00000063	DHAI-2378FC12	AC CORD(SAUDI ARABIA ONLY)	BA
013	00000063	QACCV6621QCN1	AC CORD 4.8P (OMAN,KATAR,UAE,GREECE,L	AU
013	00000063	DHAI-2378FC11	AC CORD (USA,CANADA,BARBADOS,COSTA RI	AV
013	00000063	DHAI-2379FC11	AC CORD(SOUTH AFRICA,SRI LANKA,HONG K	AZ
013	00000063	DHAI-2378FCZZ	AC CORD (JAPAN,DOMINICA,CENTRAL AMERI	AV
013	00000063	QACCB7624QCZZ	AC CORD(SINGAPORE ONLY)	BA
013	00000063	QACCL7622QCZZ	AC CORD(AUSTRALIA,NEW ZEALAND)	AY
013	00000063	QACCZ6620QCZZ	AC CORD(CHILE,PERU)	BA
013	00000063	QACCV6621QCN1	AC CORD 4.8P (MOROCCO)	AU
013	00000063	QACCV6621QCN1	AC CORD 4.8P (EUROPE(EXCEPT U,KINGDOM	AU
013	00000063	QACCJ9610QCZZ	AC CORD(PHILIPPINES ONLY)	AR
013	00000064	XBPSE30P06000	SCREW(M3X6)	AA
013	00000065	DHAI-2338FC11	INLET HARNESS A(200V SERIES)	AQ
013	00000066	TCAUH0819FCZZ	HV CAUTION LABEL(JAPAN ONLY)	AA
013	00000067	XNESD50-40000	NUT	AA
013	00000068	MSPRC2267FCZZ	EARTH SPRING 250	AA
013	00000069	MSPRC2266FCZZ	PAPER FEEDING EARTH SPRING	AB
013	00000070	XRESP70-08000	E TYPE RING	AA
013	00000071	XBPSD40P20XS0	SCREW(M4X20XS)(100V SERIES..JAPAN,DOM	AA
013	00000071	XBPSD40P25XS0	SCREW(M4X25XS)(100V SERIES..USA,CANAD	AA
013	00000071	XBPSD40P25XS0	SCREW(M4X25XS)(100V SERIES..GRENADIAN	AA
013	00000072	XBPSD40P08KS0	SCREW (M4X8KS)(100V SERIES)	AA
013	00000073	LFIX-0016FCZZ	AC CORD HOLDER(100V SERIES..JAPAN,DOM	AD
013	00000073	LFIX-0084FCZZ	AC CORD HOLDER(100V SERIES..USA,CANAD	AC
013	00000073	LFIX-0084FCZZ	AC CORD HOLDER(100V SERIES..GRENADIAN	AC
013	00000075	PSHEP3724FCZZ	BU SHEET 1	AB
013	00000076	PSHEP3725FCZZ	BU SHEET 2	AB
013	00000077	PSHEZ3716FCZZ	FUSING LOWER PRESSURE SHEET	AK
013	00000078	PSHEP3665FCZZ	LOWER UNIT PWB PROTECT SHEET	AB
013	00000081	VHPGP3A38//-1	PHOTO SENSOR(GP3A38)	AH
013	00000082	XBPSD40P10000	SCREW(M4X10)	AA
013	00000083	DHAI-2312FCZZ	PECD1 INTERFACE HARNESS	AK
013	00000084	XRESP90-08000	E TYPE RING (SF-2114/SF-2214)	AA
013	00000085	LFRM-0804FCZZ	OP CASSETTE DRIVE FRAME (SF-2114/SF-2	AD
013	00000086	NGERH1015FCZZ	PS JOINT GEAR 25T (SF-2114/SF-2214)	AD
013	00000087	NGERH0211FCZZ	GEAR 30T (SF-2114/SF-2214)	AC
013	00000088	GLEGG0058FCZZ	RUBBER FOOT	AC
013	00000089	XEPSD30P20000	SCREW(M3X20) (SF-2114/SF-2214)	AA
013	00000090	NBRGP0512FCZZ	SUCTION BEARING B	AC
013	00000091	NROLP1024FCZZ	SUCTION ROLLER A	AF
013	00000092	NROLP1025FCZZ	SUCTION ROLLER B	AF
013	00000093	NBLTH0236FCZZ	SUCTION BELT	AK
013	00000094	NBRGP0511FCZZ	SUCTION BEARING A	AB
013	00000095	LPLTM4756FCZZ	GRAND PLATE(JAPAN ONLY)	AE
013	00000096	MSPRP2273FCZZ	GRAND SPRING(JAPAN ONLY)	AC
013	00000097	XEBSE40P12000	SCREW(M4X12)(JAPAN ONLY)	AA
014	00000001	LHLDZ1202FCZZ	SOCKET HOLDER	AL
014	00000002	XBPSD30P14000	SCREW(M3X14)	AA
014	00000003	MSPRC2232FCZZ	ELECTRODE SPRING	AB
014	00000004	QSLP-0171FCZZ	MC SOCKET ELECTRODE B	AC
014	00000005	QSLP-0170FCZZ	MC SOCKET ELECTRODE A	AC
014	00000006	LX-BZ0735FCZZ	SCREW	AA
014	00000007	QSLP-0173FCZZ	BC SOCKET ELECTRODE	AB
014	00000008	QSLP-0169FCZZ	TC SOCKET ELECTRODE	AG
014	00000009	MSPRC2192FCZZ	TC CASE GND SPRING	AB
014	00000010	RTRNZ0487FCZZ	HIGH VOLTAGE TRANSFORMER	BG
014	00000011	DHAI-2313FCZZ	MC PWB INTERFACE HARNESS	AK

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
014	00000012	DUNT-6733FCZZ	TC CORE UNIT(B-01-A)	AF
014	00000013	XBPSD30P06K00	SCREW(M3X6K)	AA
014	00000014	QSLP-0169FCZ1	TC SOCKET ELECTRODE B	AC
014	00000015	XBPSD30P06000	SCREW(M3X6)	AA
014	00000016	PSHEP3728FCZZ	TC ELECTRODE COVER SHEET	AF
014	00000901	CHLDZ1202FC51	SOCKET HOLDER UNIT	BL
015	00000001	PGIDM1493FCZZ	AC GUIDE	AE
015	00000002	LPLTM4555FCZZ	DISCHARGE PLATE 1	AK
015	00000003	DWIR-0466CSZZ	CHARGER WIRE	BG
015	00000004	MSPRT0513FCZZ	MC TENSION SPRING	AA
015	00000005	XEBSD30P06000	SCREW(M3X6)	AA
015	00000006	QSLP-0174FCZZ	TC ELECTRODE	AB
015	00000007	LHLDZ1205FCZZ	TC HOLDER	AK
015	00000008	MSPRC2205FCZZ	TRANSFER FRONT GUIDE EARTH SPRING	AA
015	00000009	PCASZ0261FCZZ	TC CASE	AH
015	00000010	CGIDH1492FC51	TRANSFER FRONT GUIDE UNIT	AN
015	00000011	XEPSD30P06000	SCREW(M3X6)	AA
015	00000901	CCASZ0261FC51	TC CASE UNIT	AY
016	00000001	XRESP40-05000	E TYPE RING(4E)	AA
016	00000002	NGERH1028FCZZ	GEAR 16T	AP
016	00000003	LPINS0133FCZZ	PIN(M2-10)	AA
016	00000004	NBRGP0266FCZZ	BEARING(M5)	AA
016	00000005	NROLR1018FCZZ	MANUAL FEEDING ROLLER S	AN
016	00000006	XEBSD30P10000	SCREW(M3X10)	AA
016	00000007	PGIDM1507FCZZ	MANUAL FEEDING GUIDE SR	AD
016	00000008	PRNGP0081FCZZ	RING(E4)	AA
016	00000009	NGERH0885FCZZ	GEAR TB	AC
016	00000010	NGERH0236FCZZ	STIR GEAR 18T	AC
016	00000011	LFRM-0812FCZZ	MANUAL FEEDING FRAME S	AQ
016	00000012	MLEVP0651FCZZ	PID1 ACTUATOR	AD
016	00000013	LPLTP4577FCZZ	GUIDE FRICTIONAL PLATE	AC
016	00000014	MSPRT2221FCZZ	TRANSPORT COLLAR PRESSURE SPRING	AA
016	00000015	LHLDZ1194FCZZ	TRANSPORT COLLAR HOLDER	AD
016	00000016	PCLR-0393FCZZ	COLLAR	AD
016	00000017	LBNDJ0013FCZ1	WIRE BAND	AA
016	00000018	XEBSD40P16000	SCREW(M4X16)	AA
016	00000019	VHPGP1A22LC-1	PHOTO SENSOR(GP1A22LC)	AK
016	00000020	CPWBF1066FC51	MANUAL FEEDING SINGLE PWB	AR
016	00000021	GCAB-0800FCZZ	MANUAL FEED EXTERIOR S	AV
016	00000022	PGIDH1540FCZZ	MANUAL FEEDING ROLLER GUIDE UPPER	AD
016	00000023	PCLR-0398FCZZ	MANUAL FEEDING COLLAR	AB
016	00000024	XEPSD40P10000	SCREW(M4X10)	AA
016	00000025	TLABZ3577FCZZ	MF SIZE LABEL(JAPAN ONLY) (SF-2014)	AF
016	00000025	TLABZ3578FCZZ	MF SIZE LABEL(AB SERIES)	AF
016	00000025	TLABZ3579FCZZ	MF SIZE LABEL(INCH SERIES)	AF
016	00000901	CFRM-0812FC53	SINGLE PAPER FEEDING UNIT(INCH SERIES	BE
016	00000901	CFRM-0812FC51	SINGLE PAPER FEEDING UNIT(JAPAN ONLY)	BE
016	00000901	CFRM-0812FC52	SINGLE PAPER FEEDING UNIT(EXPORT..AB	BE
017	00000001	MSPRT2220FCZZ	MANUAL FEED SPRING	AA
017	00000002	MARMP0181FCZZ	ARM	AC
017	00000003	LHLDZ1192FCZZ	SOLENOID HOLDER	AF
017	00000004	RPLU-0300FCZZ	MANUAL FEED SOLENOIDE B	AV
017	00000005	XRESP40-05000	E TYPE RING	AA
017	00000006	NROLR1051FCZZ	MANUAL PAPER FEED ROLLER	AT
017	00000007	NGERH0495FCZZ	GEAR 20T	AC
017	00000008	LPINS0165FCZZ	PIN(M2X8)	AB
017	00000009	NBRGP0266FCZZ	BEARING(M5)	AA
017	00000010	LBOSZ1031FCZZ	CLUTCH BOSS	AC
017	00000011	MSPRC1152FCZZ	CLUTCH SPRING	AE

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
017	00000012	PPIPP0108FCZZ	CLUTCH SLEEVE	AA
017	00000013	NGERH0491FCZZ	CL GEAR 16T	AE
017	00000014	NSFTZ2062FCZZ	MANUAL FEED ROLLER SHAFT	AK
017	00000015	NGERH0892FCZZ	16T GEAR	AB
017	00000016	MARMP0180FCZZ	MANUAL FEED ARM	AE
017	00000017	CROLP0921FC01	MANUAL FEED TAKE-UP ROLLER	AM
017	00000018	MSPRT2271FCZZ	ROLLER SPRING	AB
017	00000019	NGERH0885FCZZ	GEAR TB	AC
017	00000020	NSFTZ2063FCZZ	INPUT GEAR SHAFT	AD
017	00000021	MSPRC2222FCZZ	EARTH SPRING	AB
017	00000022	XEBSD30P08000	SCREW(M3X8)	AA
017	00000023	CROLR1048FC31	REVERSING ROLLER UNIT	AV
017	00000024	LHLDZ1193FCZZ	SEPARATOR ROLLER HOLDER	AC
017	00000025	MSPRC2219FCZZ	PRESSURE SPRING	AA
017	00000026	LPLTM4576FCZZ	SEPARATOR ROLLER HOLD PLATE	AF
017	00000027	PSHEZ3655FCZZ	MAMUAL FEEDING SHEET	AB
017	00000028	PSHEP3599FCZZ	MANUAL FEED SHEET	AB
017	00000029	MARMP0182FCZZ	MANUAL FEED GATE ARM	AE
017	00000030	LSTPP0278FCZZ	MANUAL FEED STOPPER	AC
017	00000031	MSPRT2221FCZZ	TRANSPORT COLLAR PRESSURE SPRING	AA
017	00000032	LHLDZ1194FCZZ	TRANSPORT COLLAR HOLDER	AD
017	00000033	PCLR-0393FCZZ	COLLAR	AD
017	00000034	LFRM-0811FCZZ	MANUAL FEED FRAME	AQ
017	00000035	LPLTP4577FCZZ	GUIDE FRICTIONAL PLATE	AC
017	00000036	PGIDM1506FCZZ	MANUAL FEED GUIDE R	AC
017	00000037	RPLU-0299FCZZ	MANUAL FEED SOLENOIDE A	AV
017	00000038	CPWBF1059FC51	MANUAL PAPER FEEDING MULTI PWB	AS
017	00000039	XEBSD30P10000	SCREW(M3X10)	AA
017	00000040	PGIDM1505FCZZ	TRAY GUIDE R	AF
017	00000041	MLNKP0021FCZZ	TRAY OPEN AND SHUT LINK R	AD
017	00000042	PRNGP0081FCZZ	RING(E4)	AA
017	00000043	GCAB-0799FCZZ	MANUAL FEED EXTERIOR	AW
017	00000044	MLNKP0020FCZZ	TRAY OPEN AND SHUT LINK F	AD
017	00000045	PGIDM1504FCZZ	TRAY GUIDE F	AF
017	00000046	TLABZ3579FCZZ	MANUAL FEED SIZE LABEL(INCH SERIES) (	AF
017	00000046	TLABZ3578FCZZ	MANUAL FEED SIZE LABEL(EXPORT..AB SER	AF
017	00000046	TLABZ3577FCZZ	MANUAL FEED SIZE LABEL(JAPAN ONLY)	AF
017	00000047	XEBSE30P06000	SCREW(M3X6)	AA
017	00000048	LSOU-0134FCZZ	MANUAL FEED TRAY 1	AM
017	00000049	LSOU-0136FCZZ	MANUAL FEED TRAY 3	AK
017	00000050	LSOU-0135FCZZ	MANUAL FEED TRAY 2	AM
017	00000051	LBNDJ0013FCZZ	WIRE BAND	AA
017	00000052	PSHEZ3699FCZZ	MANUAL FEED MULTI SHEET	AC
018	00000001	CPLTM4554FC01	PAPER FEEDING DRIVE PLATE	AF
018	00000002	NGERH1015FCZZ	PS JOINT GEAR 25T	AD
018	00000003	NGERH0885FCZZ	GEAR TB	AC
018	00000004	MARMP0184FCZZ	PS JOINT ARM	AD
018	00000005	XRESP50-06000	E TYPE RING	AA
018	00000006	MSPRC1120FCZZ	PAPER GUIDE FRONT SPRING	AA
018	00000007	NGERH0209FCZ1	DELIVERY ROLLER GEAR 24T	AB
018	00000008	NBRGC0504FCZZ	BEARING(F8X12X15 16X)	AC
018	00000009	NGERH1017FCZZ	TRANSPORT GEAR 19T	AM
018	00000010	XEBSE40P12000	SCREW(M4X12)	AA
018	00000011	PCLC-0231FCZZ	PAPER FEEDING CLUTCH	AW
018	00000012	DHAI-2298FCZZ	250 PF INTERFACE HARNESS	AM
018	00000013	LFRM-0805FCZZ	PAPER FEEDING FRAME	AP
018	00000014	XRESP70-08000	E TYPE RING	AA
018	00000015	NPLYZ0295FCZZ	TRANSPORT ROLLER PULLEY	AM
018	00000016	NBRGP0510FCZZ	ROLLER BEARING	AC

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
018	00000017	NROLR1030FCZZ	TRANSPORT ROLLER	AN
018	00000019	LHLDZ1204FCZZ	PAPER FEEDING ROLLER HOLDER	AG
018	00000020	MLEVP0659FCZZ	PPD1 ACTUATOR	AC
018	00000021	XEBSD30P06000	SCREW(M3X6)	AA
018	00000022	NSFTZ2050FCZZ	PAPER FEEDING ROLLER SHAFT	AM
018	00000023	LSTPP0279FCZZ	STOPPER	AB
018	00000024	NROLR1049FCZZ	PAPER FEEDING ROLLER	AT
018	00000025	LPINS0133FCZZ	PIN(M2-10)	AA
018	00000026	NBLTH0235FCZZ	BELT(80MXL 3.2)	AF
018	00000027	NPLYZ0106FCZZ	PULLEY 22	AC
018	00000028	MSPRC2201FCZZ	ROLLER RELEASE ARM SPRING 250	AB
018	00000029	MARMP0187FCZZ	ROLLER RELEASE ARM	AC
018	00000030	MSPRC2202FCZZ	LIMITER SPRING 250	AD
018	00000031	PCLR-0230FCZZ	COLLAR	AD
018	00000032	LPINS0134FCZZ	PIN(M2-12)	AB
018	00000033	NSFTZ2118FCZZ	ROLLER SHAFT	AC
018	00000034	NROLR0878FCZZ	ROLLER	AM
018	00000035	XRESP40-05000	E TYPE RING(4E)	AA
018	00000036	LBNDJ2003SCZZ	BAND,WIRE(LARGE)	AA
018	00000037	CPWBF1071FC52	TRANSPORT SENSOR PWB 250	AR
018	00000038	XWHSD30-10080	WASHER	AA
018	00000039	XEPSD40P12000	SCREW(M4X12)	AA
018	00000040	LX-WZ0407FCZZ	WASHER	AB
018	00000041	XEPSD30P20000	SCREW(M3X20)	AA
018	00000042	PCUSS0315FCZZ	ROLLER CUSHION	AB
018	00000043	PCUSS0316FCZZ	ACTUATOR CUSHION	AA
018	00000901	CFRM-0805FC51	250 CASSETTE PAPER FEEDING UNIT	BM
019	00000001	TLABZ3568FCZZ	INDICATION LABEL	AB
019	00000002	LPLTP4556FCZZ	CASSETTE SIDE PLATE 250	AK
019	00000003	PCUSS0300FCZZ	CASSETTE CUSHION	AB
019	00000004	MSPRC1873FCZZ	RETURN SPRING 250	AB
019	00000005	PSHEP3730FCZZ	CASSETTE SIDE PLATE SHEET	AK
019	00000006	MLEVP0661FCZZ	PE ACTUATOR 250	AE
019	00000007	LDAIU0485FCZZ	OFF CENTER ADJUSTING BLOCK	AC
019	00000008	XEBSE40P12000	SCREW(M4X12)	AA
019	00000009	GCASP0164FCZZ	CASSETTE 250	AZ
019	00000010	HINDP0480FCZZ	CASSETTE SIZE INDICATOR(JAPAN ONLY)	AG
019	00000010	HINDP0481FCZZ	CASSETTE SIZE INDICATOR(EXPORT..AB SE	AG
019	00000010	HINDP0482FCZZ	CASSETTE SIZE INDICATOR(INCH SERIES)	AG
019	00000011	TLABZ3567FCZZ	CASSETTE INSTRUCTION LABEL	AE
019	00000012	LPLTM2642FCGZ	CASSETTE REAR PLATE	AD
019	00000013	PCOVP1237FCZZ	CASSETTE COVER 250	AF
019	00000014	XEBSE30P08000	SCREW(M3X8)	AA
019	00000016	XEBSE40P06000	SCWER(M4X6)	AA
019	00000017	PCUSS0316FCZZ	CUSHION FOR ACTUATOR	AA
020	00000001	PRDAR0060FCZZ	HEAT SINK	AK
020	00000002	QCNCM0597FCZZ	CONNECTOR(10PIN) (CN-A)	AC
020	00000003	QCNCM0598FCZZ	CONNECTOR(11PIN) (CN-G)	AC
020	00000004	QCNCM0806FCZZ	CONNECTOR(32PIN) (CN-I)	AE
020	00000005	QCNCM0807FCZZ	CONNECTOR(30PIN) (CN-H)	AE
020	00000006	QCNCM0821FCZZ	CONNECTOR(10PIN) (CN-D)	AD
020	00000007	QCNCM0822FCZZ	CONNECTOR(14PIN) (CN-B)	AD
020	00000008	QCNCM7014SC0C	CONNECTOR(3PIN) (CN-K)	AA
020	00000009	QCNCM7014SC0E	CONNECTOR(5PIN) (CN-E)	AB
020	00000010	QCNCM7014SC0F	CONNECTOR(6PIN) (CN-C)	AB
020	00000011	QCNCM7014SC0H	CONNECTOR(8PIN) (CN-F)	AB
020	00000012	QCNCW0373FCZZ	CONNECTOR(8PIN) (CN-J)	AC
020	00000013	QSOCZ6408ACZZ	IC SOCKET(8PIN) (FOR IC103)	AB
020	00000014	RC-AZ0358FCZZ	CAPACITOR(5.5WV 4.7UF) (C105)	AE

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
020	00000015	RCRM-0001FCZZ	CERAMIC OSCILATOR(8.00MHZ) (X101)	AD
020	00000016	RH-DZ0016FCZZ	DIODE(MA700) (D105)	AB
020	00000017	RMPTC3103QCJB	BLOCK RESISTOR(10KOHMX3 1/8W +-5%) (B	AA
020	00000018	RMPTC4103QCJB	BLOCK RESISTOR(10KOHMX4 1/8W +-5%) (B	AD
020	00000019	VCCCTV1HH330J	CAPACITOR(50WV 33PF) (C149)	AA
020	00000020	VCEAGU1CW476M	CAPACITOR(16WV 47UF) (C104)	AB
020	00000021	VCEAGU1HW474M	CAPACITOR(50WV 0.47UF) (C101,107)	AA
020	00000022	VCEAGU1HW476M	CAPACITOR(50WV 47UF) (C109)	AB
020	00000023	VCEAGU1HW477M	CAPACITOR(50WV 470UF) (C103)	AD
020	00000024	VCEAGU1VW106M	CAPACITOR(35WV 10UF) (C108)	AA
020	00000025	VCEAGU1VW476M	CAPACITOR(35WV 47UF) (C102)	AB
020	00000026	VCKYTV1HB102K	CAPACITOR(50WV 1000PF) (C110 114,120,	AA
020	00000026	VCKYTV1HB102K	CAPACITOR(50WV 1000PF) (C148)	AA
020	00000027	VCKYTV1HB222K	CAPACITOR(50WV 2200PF) (C118,119)	AA
020	00000028	VCKYTV1HB223K	CAPACITOR(50WV 0.022UF) (C143,144,145	AA
020	00000028	VCKYTV1HB223K	CAPACITOR(50WV 0.022UF) (C115,121,125	AA
020	00000029	VCKYTV1HB471K	CAPACITOR(50WV 470PF) (C116,117)	AA
020	00000030	VCKYTV1HB473K	CAPACITOR(50WV 0.047UF) (C133)	AA
020	00000031	VCQYNU1HM103K	CAPACITOR(50WV 0.010UF) (C131)	AA
020	00000032	VCQYNU1HM104K	CAPACITOR(50WV 0.10UF) (C106)	AB
020	00000033	VHDDAN202K/-1	DIODE(DAN202K) (D118)	AB
020	00000034	VHDDAP202K/-1	DIODE(DAP202K) (D119)	AB
020	00000035	VHDDSM1D1//-1	DIODE(DSM1D1) (D108,109)	AB
020	00000036	VHDDSS131//-1	DIODE(DSS131) (D101)	AA
020	00000037	VHDDSS133//-1	DIODE(DSS133) (D102,103,104,106,107,1	AA
020	00000038	VHEHZS5B3//-V	ZENER DIODE(HZS5B3) (ZD104,105,106)	AB
020	00000039	VHEHZS7A1//-1	ZENER DIODE(HZS7A1) (ZD103)	AB
020	00000040	VHERD13EB1/-1	ZENER DIODE(RD13EB1) (ZD101,102)	AB
020	00000041	VHILM324NS/-S	IC(LM324NS) (IC111)	AC
020	00000042	VHILM339NS/-1	IC(LM339NS) (IC112)	AD
020	00000043	VHIM51953BL-1	IC(M51953BL) (IC113)	AF
020	00000044	VHISLA7024M-P	IC(SLA7024M) (IC107)	AT
020	00000045	VHISN74LS07NS	IC(SN74LS07NS) (IC109)	AF
020	00000046	VHITA7291S/-1	IC(TA7291S) (IC105)	AF
020	00000047	VHITA78057S-1	IC(TA78057S) (IC107)	AE
020	00000048	VHIULN2003AN1	IC(ULN2003AN1) (IC102,104,106,108)	AE
020	00000049	VHIX24022//-1	IC(X24022) (IC103)	AL
020	00000050	VHI37702E4140	IC(37702E4140) (IC110)	BK
020	00000051	VRD-HT2HY222J	RESISTOR(1/2W 2.2KOHM +-5%) (R105,106	AA
020	00000052	VRD-HT2HY511J	RESISTOR(1/2W 510OHM +-5%) (R101)	AA
020	00000053	VRS-HT3DA1R0J	RESISTOR(2W 1.0OHM +-5%) (R103,104)	AB
020	00000054	VRD-RB2HY823J	RESISTOR(1/2W 82KOHM +-5%) (R102)	AA
020	00000055	VRS-TP2BD000J	RESISTOR(1/8W 0OHM +-5%)	AA
020	00000056	VRS-TS2AD101J	RESISTOR(1/10W 100OHM +-5%) (R116)	AA
020	00000057	VRS-TS2AD102F	RESISTOR(1/10W 1KOHM +-1%) (R146)	AA
020	00000058	VRS-TS2AD102J	RESISTOR(1/10W 1.0KOHM +-5%) (R107,10	AA
020	00000058	VRS-TS2AD102J	RESISTOR(1/10W 1.0KOHM +-5%) (R159,17	AA
020	00000059	VRS-TS2AD103F	RESISTOR(1/10W 10KOHM +-1%) (R147)	AA
020	00000060	VRS-TS2AD103J	RESISTOR(1/10W 10KOHM +-5%) (R121,133	AA
020	00000060	VRS-TS2AD103J	RESISTOR(1/10W 10KOHM +-5%) (R193,195	AA
020	00000061	VRS-TS2AD104J	RESISTOR(1/10W 100KOHM +-5%) (R194)	AA
020	00000062	VRS-TS2AD105J	RESISTOR(1/10W 1MOHM +-5%) (R199)	AA
020	00000063	VRS-TS2AD122J	RESISTOR(1/10W 1.2KOHM +-5%) (R183,18	AA
020	00000064	VRS-TS2AD153F	RESISTOR(1/10W 15KOHM +-1%) (R110,165	AA
020	00000066	VRS-TS2AD222J	RESISTOR(1/10W 2.2KOHM +-5%) (R163)	AA
020	00000067	VRS-TS2AD223J	RESISTOR(1/10W 22KOHM +-5%) (R126)	AA
020	00000068	VRS-TS2AD242J	RESISTOR(1/10W 2.4KOHM +-5%) (R118,11	AA
020	00000069	VRS-TS2AD302J	RESISTOR(1/10W 3.0KOHM +-5%) (R171)	AA
020	00000070	VRS-TS2AD303F	RESISTOR(1/10W 30KOHM +-1%) (R155)	AA

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
020	00000071	VRS-TS2AD334F	RESISTOR(1/10W 330KOHM +-1%) (R154)	AA
020	00000072	VRS-TS2AD392J	RESISTOR(1/10W 3.9KOHM +-5%) (R137)	AA
020	00000073	VRS-TS2AD472J	RESISTOR(1/10W 4.7KOHM +-5%) (R150,20	AA
020	00000074	VRS-TS2AD473F	RESISTOR(1/10W 47KOHM +-1%) (R168)	AA
020	00000075	VRS-TS2AD473J	RESISTOR(1/10W 47KOHM +-5%) (R113,114	AA
020	00000076	VRS-TS2AD562F	RESISTOR(1/10W 5.6KOHM +-1%) (R156,15	AA
020	00000077	VRS-TS2AD562J	RESISTOR(1/10W 5.6KOHM +-5%) (R111,12	AA
020	00000078	VRS-TS2AD563J	RESISTOR(1/10W 56KOHM +-5%) (R148)	AA
020	00000079	VRS-TS2AD621J	RESISTOR(1/10W 620OHM +-5%) (R117)	AA
020	00000080	VRS-TS2AD751J	RESISTOR(1/10W 750OHM +-5%) (R115)	AA
020	00000081	VRS-TS2AD752J	RESISTOR(1/10W 7.5KOHM +-5%) (R149)	AA
020	00000082	VRS-TS2AD823F	RESISTOR(1/10W 82KOHM +-1%) (R170)	AA
020	00000083	VSDTA114YK/-1	TRANSISTOR(DTA114YK) (Q109,110,111)	AC
020	00000084	VSDTC114YK/-1	TRANSISTOR(DTC114YK) (Q105,106,107)	AC
020	00000085	VS2SC2411K/-1	TRANSISTOR(2SC2411K) (Q108)	AB
020	00000086	VS2SD1853-/-1	TRANSISTOR(2SD1853) (Q102,103)	AC
020	00000087	VS2SD2045-/-1	TRANSISTOR(2SD2045) (Q101)	AH
020	00000088	XBBSD30P06000	SCREW(M3X6) (FOR HEAT SINK)	AA
020	00000089	XBPSD30P06K00	SCREW(M3X6K) (FOR IC101)	AA
020	00000090	XBPSD30P08K00	SCREW(M3X8K) (FOR Q101)	AA
020	00000901	CPWBF1051FC51	MAIN PWB	BU
021	00000001	QCNCM0611FCZZ	CONNECTOR(10PIN) (CN-A)	AE
021	00000002	QCNCM0876FCZZ	CONNECTOR(4PIN) (CN-B)	AB
021	00000003	QSW-P0465FCZZ	TACT SWITCH(SKHVPB) (PSW,CLK,1K 9K,0K	AC
021	00000003	QSW-P0465FCZZ	TACT SWITCH(SKHVPB)(SF-2114/SF-2214)	AC
021	00000004	RC-KZ0287FCZZ	CAPACITOR(22000PF) (C402,409)	AA
021	00000005	RMPTC3102QCJB	BLOCK RESISTOR(1.0KOHMX3 1/8W +-5%) (	AA
021	00000006	VCEAJU1CW476M	CAPACITOR(16WV 47UF) (C401)	AB
021	00000007	VCKYPU1HB102K	CAPACITOR(50WV 1000PF) (C410)	AA
021	00000008	VCKYPU1HB221K	CAPACITOR(50WV 220PF) (C406,407,408)	AB
021	00000009	VHDDSM1D1//-1	DIODE(DSM1D1) (D407)	AB
021	00000010	VHDDSS133//-1	DIODE(DSS133) (D401 406)	AA
021	00000011	VHILC7935//-1	IC(LC7935) (IC401)	AN
021	00000012	VHPLB-403MF1/	PHOTO TRANSISTOR(LB-403MF1) (LEDM)	AR
021	00000013	VHPSLR-320MCA	LED(SLR-320MCA) (PSL,RPL,CSL1,2,EXL1	AB
021	00000013	VHPSLR-320MCA	LED(SLR-320MCA)(SF-2214) (SDHL)	AB
021	00000013	VHPSLR-320MCA	LED(SLR-320MCA)(SF-2114/SF-2214) (ZOL	AB
021	00000014	VHPSLR-320VCA	LED(SLR-320VCA) (TEL,PEL,JAML,CRUL,MT	AB
021	00000014	VHPSLR-320VCA	LED(SLR-320VCA)(SF-2214) (SJAL)	AB
021	00000015	VRD-HT2EY102J	RESISTOR(1/4W 1.0KOHM +-5%) (R402,403	AA
021	00000016	VRD-HT2EY151J	RESISTOR(1/4W 150OHM +-5%) (R401,416	AA
021	00000016	VRD-HT2EY151J	RESISTOR(1/4W 150OHM +-5%)(SF-2114/SF	AA
021	00000016	VRD-HT2EY151J	RESISTOR(1/4W 150OHM +-5%)(SF-2214) (	AA
021	00000017	VRD-HT2EY201J	RESISTOR(1/4W 200OHM +-5%) (R405,407,	AA
021	00000018	VSDTB113ZS/-1	TRANSISTOR(DTB113ZS) (Q401,402)	AC
021	00000901	CPWBF1052FC53	OPERATION PWB BF (SF-2214)	BG
021	00000901	CPWBF1052FC51	OPERATION PWB A (SF-2014)	BF
021	00000901	CPWBF1052FC52	OPERATION PWB B (SF-2114)	BG
022	00000001	DHAI-2315FCZZ	AC PWB EARTH HARNESS	AD
022	00000002	PRDAF0044FCZZ	HEAT SINK(SP2224) (FOR CL TRIAC)	AC
022	00000003	PRDAF0062FCZZ	HEAT SINK A (FOR HL TRIAC)	AE
022	00000004	PRDAF0063FCZZ	HEAT SINK B (FOR BD501)	AF
022	00000005	PSHEZ2727FCZZ	INSULATOR SHEET (FOR TRIAC)	AC
022	00000006	QCNCW0843FCZZ	CONNECTOR(2PIN)(200V SERIES) (CNA)	AC
022	00000006	QCNCM0672FCZZ	CONNECTOR(2PIN)(JAPAN AND 100V SERIES	AB
022	00000007	QCNCM1069ACZZ	CONNECTOR(6PIN) (CNB)	AD
022	00000008	QCNCM7014SC0D	CONNECTOR(4PIN) (CNC)	AB
022	00000009	QCNCW0448FCZZ	CONNECTOR(8PIN) (CNE)	AB
022	00000010	QFS-A2700QCZZ	FUSE(20A 125V)(JAPAN ONLY) (F501,502)	AD

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
022	00000010	QFS-B0030FCZZ	FUSE(15A 250V)(EXPORT..100V SERIES) (	AH
022	00000010	QFS-C1500QCZZ	FUSE(10A 240V)(200V SERIES) (F501,502	AF
022	00000011	QFS-D0331QCZZ	FUSE(3.15A 125V)(JAPAN AND 100V SERIE	AD
022	00000011	QFS-D1326QCZZ	FUSE(3.15A 250V)(200V SERIES) (F503)	AD
022	00000012	QFS-D1422QCZZ	FUSE(5A 250V)(200V SERIES) (F504)	AD
022	00000012	QFS-D0430QCZZ	FUSE(5A 125V)(JAPAN AND 100V SERIES)	AD
022	00000013	QFS-D1330QCZZ	FUSE(1A 250V)(JAPAN AND 100V SERIES)	AD
022	00000013	QFS-D1325QCZZ	FUSE(1A 250V)(200V SERIES) (F505)	AD
022	00000014	QFSHA0025FCZZ	FUSE HOLDER(S-N5057-01) (FOR F503 505	AA
022	00000015	QFSHD0001QCZZ	FUSE HOLDER(C2680R-H) (FOR F501,502)	AA
022	00000016	QTANP0115FCZZ	TAB TERMINAL(T86032)	AB
022	00000017	QTANP0116FCZZ	TAB TERMINAL(T46036)	AA
022	00000018	QTANP0189FCZZ	TAB TERMINAL (CND)	AC
022	00000019	RC-KZ472ANC3A	CAPACITOR(1KV 4700PF) (C501,503)	AD
022	00000020	RCILF0031FCZZ	COIL(100UH 8A)(200V SERIES) (L501,502	AR
022	00000021	RCILF0048FCZZ	COIL(100UH 3A) (L503)	AG
022	00000022	RMPTA0031FCZZ	CR MIX PART(ECQ-J0186X) (CR501,502)	AE
022	00000023	RRLYD6122QCZZ	RELAY(0MIH-SS-124LM) (RY501)	AM
022	00000024	VCEAAL1HC682M	CAPACITOR(50WV 6800PF) (C509)	AP
022	00000025	VCEASU1EC222M	CAPACITOR(25WV 2200PF) (C510)	AE
022	00000026	VCFYEG2EA224M	CAPACITOR(250WV 0.22UF) (C506)	AE
022	00000027	VCFYEG2EA474M	CAPACITOR(250WV 0.47UF)(200V SERIES)	AG
022	00000028	VCQYNU1HM104K	CAPACITOR(50WV 0.10UF) (C507,508)	AB
022	00000029	VHDDSM1D1//-1	DIODE(DSM1D1) (D501)	AB
022	00000030	VHDRBV608//-1	DIODE(RBV608) (BD501)	AH
022	00000031	VHDS1NB60//-1	DIODE(S1NB60) (BD502)	AD
022	00000032	VHDS1ZB60//-1	DIODE(S1ZB60) (BD503)	AC
022	00000033	VHRS21MD3V/-1	PHOTO THYRISTOR(S21MD3V)(200V SERIES)	AE
022	00000033	VHRS11MD5V/-1	PHOTO THYRISTOR(S11MD5V)(JAPAN AND 10	AF
022	00000034	VHSTM1661P-L1	HL TRIAC(TM1661P-L1)(200V SERIES) (TD	AP
022	00000034	VHSTM1641P-L1	HL TRIAC(TM1641P-L1)(JAPAN AND 100V S	AP
022	00000035	VHSTM1661S-LF	CL TRIAC(TM1661S) (TD502)	AK
022	00000036	VRD-HT2EY105J	RESISTOR(1/4W 1.0MOHM +-5%)(JAPAN AND	AA
022	00000036	VRD-HT2EY474J	RESISTOR(1/4W 470KOHM +-5%)(200V SERI	AA
022	00000037	VRD-HT2EY243J	RESISTOR(1/4W 24KOHM +-5%) (R508)	AA
022	00000038	VRS-HT2HA101J	RESISTOR(1/2W 100OHM +-5%) (R504,506)	AA
022	00000039	VRS-HT2HA201J	RESISTOR(1/2W 200OHM +-5%)(200V SERIE	AA
022	00000039	VRS-HT2HA121J	RESISTOR(1/2W 120OHM +-5%)(JAPAN AND	AA
022	00000040	XBPSD30P08K00	SCREW(3X8K) (FOR CL TRIAC)	AA
022	00000041	XBPSD30P10K00	SCREW(3X10K) (FOR HL,BD)	AA
022	00000042	XNESD30-24000	NUT(3MM) (FOR CL TRIAC)	AA
022	00000901	CPWBF1053FC51	AC CIRCUIT PWB(JAPAN ONLY)	BK
022	00000901	CPWBF1053FC52	AC CIRCUIT PWB(EXPORT..100V SERIES)	BK
022	00000901	CPWBF1053FC53	AC CIRCUIT PWB(200V SERIES)	BN
023	00000001	DHAI-2316FCZZ	HIGH VOLTAGE HARNESS (BC)	AD
023	00000002	PSHEP3665FCZZ	LOWER UNIT PWB PROTECT SHEET	AB
023	00000003	QCNCM0594FCZZ	CONNECTOR(173981-7) (CN-C)	AB
023	00000004	QCNCM0863FCZZ	CONNECTOR(3110-12S)(SF-2114/SF-2214)	AM
023	00000005	QCNCM7014SC0C	CONNECTOR(3PIN) (CN-D)	AA
023	00000006	QCNCM7014SC0G	CONNECTOR(7PIN) (CN-B)	AB
023	00000007	QCNCM7014SC1J	CONNECTOR(10PIN) (CN-A)	AC
023	00000008	QCNCW0745FCZZ	CONNECTOR(3PIN) (CN-E)	AB
023	00000009	QTANP0116FCZZ	TAB TERMINAL(T46036)	AA
023	00000010	RR-XA02R0SC2E	FUSE RESISTOR(1/4W 2OHM) (FR1)	AC
023	00000011	RTRNZ0486FCZZ	DV B TRANSFORMER (T1)	AN
023	00000012	RTRNZ0495FCZZ	BC TRANSFORMER (T2)	AP
023	00000013	RVR-MD110QCZZ	VARIABLE RESISTOR(47KOHM) (VR1,2)	AE
023	00000015	VCEAGU1AW476M	CAPACITOR(10WV 47UF) (C8)	AA
023	00000016	VCEAGU1EW475M	CAPACITOR(25WV 4.7UF) (C4)	AA

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
023	00000017	VCEAGU1HW476M	CAPACITOR(50WV 47UF) (C10)	AB
023	00000018	VCEAGU1VW476M	CAPACITOR(35WV 47UF) (C7)	AB
023	00000019	VCKYPU1HB332K	CAPACITOR(50WV 3300PF) (C3)	AA
023	00000020	VCKYPU1HB391K	CAPACITOR(50WV 390PF) (C1,2)	AA
023	00000021	VCKYPU1HB472K	CAPACITOR(50WV 4700PF) (C11,16,17,25)	AA
023	00000022	VCKYPU1HF223Z	CAPACITOR(50WV 0.022UF) (C5,9,14,24,2	AA
023	00000023	VCKYPU3AB102K	CAPACITOR(1000WV 1000PF) (C15)	AC
023	00000024	VCKYPU3FB221K	CAPACITOR(3150WV 220PF) (C20,21,22,23	AB
023	00000025	VCQYNU1HM103K	CAPACITOR(50WV 0.010UF) (C13,19)	AA
023	00000026	VHDDSS131//-1	DIODE(DSS131) (D8,12)	AA
023	00000027	VHDDSS133//-1	DIODE(DSS133)(SF-2014) (D1,6,7,10,11)	AA
023	00000027	VHDDSS133//-1	DIODE(DSS133)(SF-2114/SF-2214) (D1 7,	AA
023	00000028	VHDEU2A////-1	DIODE(EU2A) (D9)	AC
023	00000029	VHDSHV02///-1	DIODE(SHV02) (D13,14,15,16)	AD
023	00000030	VHEHZ6A1///-1	ZENER DIODE(HZ6A1) (ZD1,3)	AB
023	00000031	VHEHZ7A3///-1	ZENER DIODE(HZ7A3) (ZD2,4)	AB
023	00000032	VHINJU3715L-1	IC(NJU3715L) (IC1)	AM
023	00000033	VHIULN2003AN1	IC(ULN2003AN1) (IC2,3)	AE
023	00000034	VRD-HT2EY102J	RESISTOR(1/4W 1.0KOHM +-5%) (R24,25,2	AA
023	00000035	VRD-HT2EY103J	RESISTOR(1/4W 10KOHM +-5%) (R8,17)	AA
023	00000036	VRD-HT2EY113J	RESISTOR(1/4W 11KOHM +-5%) (R19)	AA
023	00000037	VRD-HT2EY124J	RESISTOR(1/4W 120KOHM +-5%) (R15)	AA
023	00000038	VRD-HT2EY163J	RESISTOR(1/4W 16KOHM +-5%) (R11)	AA
023	00000039	VRD-HT2EY183J	RESISTOR(1/4W 18KOHM +-5%) (R9)	AA
023	00000040	VRD-HT2EY202J	RESISTOR(1/4W 2KOHM +-5%) (R20)	AA
023	00000041	VRD-HT2EY204J	RESISTOR(1/4W 200KOHM +-5%) (R10,18)	AA
023	00000042	VRD-HT2EY223J	RESISTOR(1/4W 22KOHM +-5%) (R7,16)	AA
023	00000043	VRD-HT2EY333J	RESISTOR(1/4W 33KOHM +-5%) (R23)	AA
023	00000044	VRD-HT2EY473J	RESISTOR(1/4W 47KOHM +-5%) (R4)	AA
023	00000045	VRD-HT2EY511J	RESISTOR(1/4W 510OHM +-5%) (R27,28,30	AA
023	00000046	VRD-HT2EY512J	RESISTOR(1/4W 5.1KOHM +-5%) (R1,2)	AA
023	00000047	VRD-HT2EY514J	RESISTOR(1/4W 510KOHM +-5%) (R13)	AA
023	00000048	VRD-HT2EY622J	RESISTOR(1/4W 6.2KOHM +-5%) (R12)	AA
023	00000049	VRD-HT2EY751J	RESISTOR(1/4W 750OHM +-5%) (R29)	AA
023	00000050	VRD-HT2EY752J	RESISTOR(1/4W 7.5KOHM +-5%) (R3)	AA
023	00000052	VRD-HT2HY514J	RESISTOR(1/2W 510KOHM +-5%) (R21)	AA
023	00000053	VRHYKU3AD256K	RESISTOR(1W 25MOHM +-10%) (R22)	AG
023	00000054	VS2SA1048Y/-1	TRANSISTOR(2SA1048Y) (Q2)	AB
023	00000055	VS2SC2458Y/-1	TRANSISTOR(2SC2458Y) (Q1,4,5)	AB
023	00000056	VS2SC2752K/-1	TRANSISTOR(2SC2752K) (Q3)	AE
023	00000057	VS2SD2374A/-1	TRANSISTOR(2SD2374A) (Q6)	AE
023	00000901	CPWBF1055FC52	LOWER UNIT PWB (SF-2114/SF-2214)	BH
023	00000901	CPWBF1055FC51	LOWER UNIT PWB (SF-2014)	BG
024	00000001	PRDAF0061FCZZ	HEAT SINK(PUE1625)	AE
024	00000002	QCNCM0801FCZZ	CONNECTOR(16PIN) (CN-B)	AE
024	00000003	QCNCM0825FCZZ	CONNECTOR(14PIN) (CN-A)	AD
024	00000004	QCNCM5055SC0D	CONNECTOR(4PIN) (CN-C)	AB
024	00000005	QFS-B0220QCZZ	FUSE(0.8A/125V)(100V SERIES) (F301)	AE
024	00000005	QFS-C4301CCZZ	FUSE(0.8A/250V)(200V SERIES) (F301)	AE
024	00000006	QFSHA0025FCZZ	FUSE HOLDER(S-N5057-01) (FOR F301)	AA
024	00000007	VCCCPU1HH560J	CAPACITOR(50WV 56PF) (C306)	AA
024	00000008	VCEAGU1CW106M	CAPACITOR(16WV 10UF) (C312)	AA
024	00000009	VCEAGU1HW105M	CAPACITOR(50WV 1.0UF) (C305,318,319)	AA
024	00000010	VCEAGU1HW476M	CAPACITOR(50WV 47UF) (C314,317)	AB
024	00000011	VCEAGU1VW476M	CAPACITOR(35WV 47UF) (C313)	AB
024	00000012	VCKYPU1HB102K	CAPACITOR(50WV 1000PF) (C302,320)	AA
024	00000013	VCKYPU1HF223Z	CAPACITOR(50WV 0.022UF) (C301,303,304	AA
024	00000014	VCQYNU1HM103K	CAPACITOR(50WV 0.010UF) (C307,308,309	AA
024	00000015	VCQYNU1HM104K	CAPACITOR(50WV 0.1UF) (C311)	AB

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
024	00000016	VHDDSS133//-1	DIODE(DSS133) (D301,302,303,304,306,3	AA
024	00000017	VHD1SR124-200	DIODE(1SR124-200) (D305)	AB
024	00000018	VHEHZ15-2//-1	ZENER DIODE(HZ15-2) (ZD301,302)	AB
024	00000019	VHILM358P//-1	IC(LM358P) (IC301)	AG
024	00000020	VHITA76494P-1	IC(TA76494P) (IC303)	AF
024	00000021	VHITC4066P/-1	IC(TC4066P) (IC304)	AK
024	00000022	VHITC9192P/-1	IC(TC9192P) (IC302)	AN
024	00000023	VRD-HT2EY101J	RESISTOR(1/4W 100OHM +-5%) (R315)	AA
024	00000024	VRD-HT2EY102J	RESISTOR(1/4W 1.0KOHM +-5%) (R303,305	AA
024	00000025	VRD-HT2EY103J	RESISTOR(1/4W 10KOHM +-5%) (R307,317,	AA
024	00000026	VRD-HT2EY104J	RESISTOR(1/4W 100KOHM +-5%) (R308,309	AA
024	00000027	VRD-HT2EY124J	RESISTOR(1/4W 120KOHM +-5%) (R314)	AA
024	00000028	VRD-HT2EY183J	RESISTOR(1/4W 18KOHM +-5%) (R313)	AA
024	00000029	VRD-HT2EY223J	RESISTOR(1/4W 22KOHM +-5%) (R312)	AA
024	00000030	VRD-HT2EY332J	RESISTOR(1/4W 3.3KOHM +-5%) (R302)	AA
024	00000031	VRD-HT2EY472J	RESISTOR(1/4W 4.7KOHM +-5%) (R301,304	AA
024	00000032	VRD-HT2EY473J	RESISTOR(1/4W 47KOHM +-5%) (R328)	AA
024	00000033	VRD-HT2EY681J	RESISTOR(1/4W 680OHM +-5%) (R318)	AA
024	00000034	VRD-HT2EY683J	RESISTOR(1/4W 68KOHM +-5%) (R325)	AA
024	00000035	VRD-HT2HY152J	RESISTOR(1/2W 1.5KOHM +-5%) (R321)	AA
024	00000036	VRNHT2EK1002F	RESISTOR(1/4W 10.0KOHM +-1%) (R322)	AA
024	00000037	VRNHT2EK1003F	RESISTOR(1/4W 100KOHM +-1%) (R329)	AA
024	00000038	VRNHT2EK2000F	RESISTOR(1/4W 200OHM +-1%) (R311)	AA
024	00000039	VRNHT2EK1802F	RESISTOR(1/4W 18.0KOHM +-1%) (R323)	AA
024	00000040	VRNHT2EK3901F	RESISTOR(1/4W 3.90KOHM +-1%) (R316)	AA
024	00000041	VRNHT2EK5601F	RESISTOR(1/4W 5.60KOHM +-1%) (R324)	AA
024	00000042	VRS-HT3AAR22J	RESISTOR(1W 0.22OHM +-5%) (R320)	AA
024	00000043	VSDTA114ES/-1	TRANSISTOR(DTA114ES) (Q301)	AB
024	00000044	VSDTC114ES/-1	TRANSISTOR(DTC114ES) (Q302)	AB
024	00000045	VS2SC3852-/-1	TRANSISTOR(2SC3852) (Q304)	AE
024	00000046	VS2SD1769-/-1	TRANSISTOR(2SD1769) (Q303)	AE
024	00000047	XBPSD30P08K00	SCREW(3X8K) (FOR Q303,304)	AA
024	00000901	CPWBF1060FC51	SPF CONTROL PWB(100V SERIES)	BE
024	00000901	CPWBF1060FC52	SPF CONTROL PWB(200V SERIES)	BE
025	00000001	SPAKA5163FCZZ	TOP FIXING PACKING CUSHION	AF
025	00000002	SPAKA5073FCZZ	TOP PAD B (SF-2214)	AP
025	00000002	SPAKA5072FCZZ	TOP PAD A (SF-2014/SF-2114)	AP
025	00000003	TINSF1240FCZZ	OPERATION MANUAL(FRENCH) (SF-2214)	AQ
025	00000003	TINSH1261FCZZ	OPERATION MANUAL(DUTCH) (SF-2214)	AQ
025	00000003	TINSI1242FCZZ	OPERATION MANUAL(ITALIAN) (SF-2214)	AQ
025	00000003	TINSZ1243FCZZ	OPERATION MANUAL(ARABIC) (SF-2214)	AQ
025	00000003	TINSE1244FCZZ	OPERATION MANUAL(U,KINGDOM ONLY) (SF-	AQ
025	00000003	TINSG1239FCZZ	OPERATION MANUAL(GERMAN) (SF-2214)	AQ
025	00000003	TINSE1238FCZZ	OPERATION MANUAL(ENGLISH) (SF-2214)	AN
025	00000003	TINSE1237FCZZ	OPERATION MANUAL(USA) (SF-2214)	AM
025	00000003	TINSJ1236FCZZ	OPERATION MANUAL(JAPANESE) (SF-2214)	AR
025	00000003	TINSJ1227FCZZ	OPERATION MANUAL(JAPANESE) (SF-2114)	AR
025	00000003	TINSI1224FCZZ	OPERATION MANUAL(ITALIAN) (SF-2014/SF	AQ
025	00000003	TINSZ1225FCZZ	OPERATION MANUAL(ARABIC) (SF-2014/SF-	AQ
025	00000003	TINSS1223FCZZ	OPERATION MANUAL(SPANISH) (SF-2014/SF	AQ
025	00000003	TINSE1226FCZZ	OPERATION MANUAL(U,KINGDOM ONLY) (SF-	AQ
025	00000003	TINSF1222FCZZ	OPERATION MANUAL(FRENCH) (SF-2014/SF-	AQ
025	00000003	TINSG1221FCZZ	OPERATION MANUAL(GERMAN) (SF-2014/SF-	AQ
025	00000003	TINSE1220FCZZ	OPERATION MANUAL(ENGLISH) (SF-2014/SF	AN
025	00000003	TINSE1219FCZZ	OPERATION MANUAL(USA) (SF-2014/SF-211	AM
025	00000003	TINSJ1218FCZZ	OPERATION MANUAL(JAPANESE) (SF-2014)	AR
025	00000003	TINSS1241FCZZ	OPERATION MANUAL(SPANISH) (SF-2214)	AQ
025	00000003	TINSH1260FCZZ	OPERATION MANUAL(DUTCH) (SF-2014/SF-2	AQ
025	00000004	LSOU-0129FCZZ	DERIVERY TRAY	AU

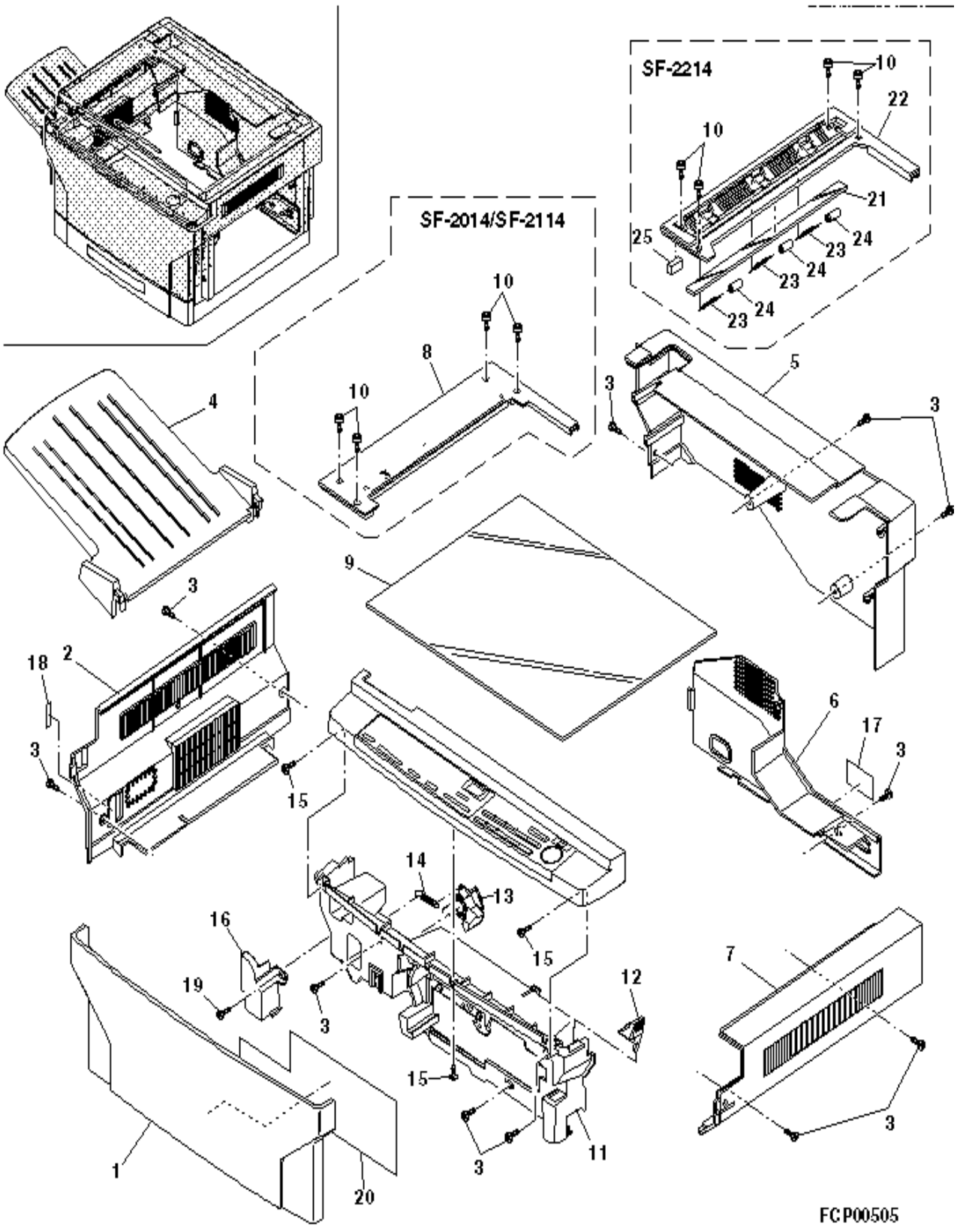
SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
025	00000005	LSOU-0133FCZZ	SPF TRAY (SF-2214)	AQ
025	00000005	LSOU-0140FCZZ	SPF TRAY 2 (SF-2214)	AH
025	00000006	SPAKA5071FCZZ	BOTTOM PAD	AS
025	00000007	SPAKC5070FC22	PACKING CASE(JAPAN ONLY) (SF-2114)	AY
025	00000007	SPAKC5070FC25	PACKING CASE(OTHER COUNTRIES) (SF-221	AY
025	00000007	SPAKC5070FC28	PACKING CASE(HONG KONG ONLY) (SF-2214	AY
025	00000007	SPAKC5075FC22	PACKING CASE(EUROPE..EXCEPT GERMANY)	AY
025	00000007	SPAKC5075FC25	PACKING CASE(GERMANY ONLY) (SF-2214)	AY
025	00000007	SPAKC5070FC24	PACKING CASE(JAPAN ONLY) (SF-2214)	AY
025	00000007	SPAKC5070FC23	PACKING CASE(OTHER COUNTRIES) (SF-211	AY
025	00000007	SPAKC5070FC27	PACKING CASE(HONG KONG ONLY) (SF-2114	AY
025	00000007	SPAKC5075FC21	PACKING CASE(EUROPE..EXCEPT GERMANY)	AY
025	00000007	SPAKC5070FC21	PACKING CASE(OTHER COUNTRIES) (SF-201	AY
025	00000007	SPAKC5070FC26	PACKING CASE(HONG KONG ONLY) (SF-2014	AY
025	00000007	SPAKC5075FC20	PACKING CASE(EUROPE..EXCEPT GERMANY)	AY
025	00000007	SPAKC5075FC23	PACKING CASE(GERMANY ONLY) (SF-2014)	AY
025	00000007	SPAKC5070FC20	PACKING CASE(JAPAN ONLY) (SF-2014)	AY
025	00000007	SPAKC5075FC24	PACKING CASE(GERMANY ONLY) (SF-2114)	AY
025	00000101	CCASZ0067FC02	MAINTENANCE CASE(JAPAN ONLY)	AM
025	00000101	CCASZ0067FC01	MAINTENANCE CASE(EXPORT)	AD
025	00000102	GCOVZ0149FCZZ	DUST COVER (JAPAN,SAUDI ARABIA,BAHRAI	AU
025	00000103	LX-BZ0715FCZZ	2ND 3RD MIRROR LOCK SCREW	AB
025	00000104	LX-BZ0716FCZZ	4TH 5TH MIRROR LOCK SCREW	AB
025	00000105	SPAKA1624FCZZ	AC CORD SLEEVE	AB
025	00000106	SPAKA5074FCZZ	OC PACKING CUSHION (SF-2014/SF-2114)	AC
025	00000107	SPAKA5076FCZZ	SPF PACKING CUSHION (SF-2214)	AD
025	00000108	SPAKA5116FCZZ	SPF PROTECT PACKING CUSHION (SF-2214)	AB
025	00000109	SPAKA5117FCZZ	TRAY PROTECT SHEET (SF-2214)	AB
025	00000110	SPAKA5131FCZZ	SPF PACKING CUSHION B (SF-2214)	AD
025	00000111	SSAKA2440QCZZ	VINYL BAG,ACCESSOIRIES(280X410MM)	AB
025	00000112	TCADS0649FCZZ	CARD(EUROPE..EXCEPT U,KINGDOM)	AM
025	00000113	TCADS0764FCZZ	WARRANTY CARD(U,KINGDOM ONLY)	AE
025	00000114	TCADZ1156FCZZ	MSDS CARD(USA,CANADA,U,KINGDOM)	AD
025	00000115	TCADZ1152FCZZ	CARD(JAPAN ONLY)	AG
025	00000116	TCADZ1159FCZZ	CAUTION CARD	AA
025	00000117	PSHEZ3726FCZZ	SHEET	AD
027	00000001	0KS-48K28860/	UPPER CRU HOUSING	BH
027	00000002	0KS-55K17150/	MC CASE	AZ
027	00000003	0KS-19E24300/	GRID FIXING HOLDER	AL
027	00000004	XEBSD30P06000	SCREW M3 X6	AA
027	00000005	0KS-55E31410/	GRID ASYMMETRICAL	AW
027	00000006	0KS-XXE11111/	MC SAWBLADE HOLDER	BC
027	00000007	0KS-XXE11112/	CHARGE SCORTRON	BF
027	00000008	0KD-48K28850/	LOWER CRU HOUSING	BG
027	00000009	9KS-33K02130/	CLEANER BLADE	BC
027	00000010	0KS-7E25810//	GEAR AUGER 18T	AN
027	00000011	0KS-7E25770//	GEAR IDLER (25/20T)	AN
027	00000012	0KS-6E42540//	AUGE WASTE TONER	AW
027	00000013	0KS-13E9000//	CLEANER BEARING	AN
027	00000014	0KS-52K2950//	TONER EXIT PIPE	AZ
027	00000015	0KS-9E63580//	SPRING SHUTTER	AR
027	00000016	0KS-52K2960//	SHUTTER EXIT PIPE	AS
027	00000017	OKS-52E09940/	TONER EXIT PIPE	AS
027	00000018	0KS-35E25790/	SEAL COVER	AL
027	00000019	0KS-6K13440//	SEPARATOR LEVER	AW
027	00000020	0KS-6E45900//	SEPARATOR LEVER 2	AT
027	00000021	0KS-9E65200//	SPRING SEPARATOR LEVER	AP
027	00000022	0KS-19K03620/	SEPARATOR PAWL	AU
027	00000023	0KS-15K13020	P/R SETTING PLATE	AW

SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
027	00000024	0KS-38E13180/	PAPER GUIDE	AS
027	00000025	0KS-9E54430//	GROUND SPRING II	AQ
027	00000026	0KS-35K05660/	TONER HOLDER SEAL	AZ
027	00000027	0KS-9E51430//	GROUND SPRING I	AQ
027	00000028	XEBSD30P10000	SCREW M3X10	AA
027	00000029	XEBSD40P12000	SCREW 4MX12	AA
027	00000030	0KS-35E30110/	SEAL BLADE CUSHION	AL
027	00000031	PRNGP0023FCZZ	G RING	AA
027	00000032	0KS-30K53390/	WASHER HOLDER	AQ
027	00000033	0KS-35E30080/	SEAL SIDE BLADE	AP
027	00000034	0KS-35E30090/	SEAL SHUTTER	AQ
027	00000035	XBBSD30P14000	SCREW M3X14	AA
027	00000036	XHBS230P10000	SCREW M3X10 BLUE	AA
051	00000001	GCOVH0220FCZZ	SECOND CASSETTE FRONT COVER	AL
051	00000002	LPLTM4552FCZZ	SECOND CASSETTE JOINT PLATE F	AK
051	00000003	PGIDM1490FCZZ	SECOND CASSETTE GUIDE L	AV
051	00000004	XRESP70-08000	E TYPE RING(7MM)	AA
051	00000005	NSFTZ2048FCZZ	SECOND IDLE GEAR SHAFT	AF
051	00000006	NBRGP0510FCZZ	ROLLER BEARING	AC
051	00000007	NGERH0851FCZZ	GEAR 33T	AD
051	00000008	LPINS0155FCZZ	PIN(M3-10)	AA
051	00000009	MARMP0185FCZZ	SECOND JOINT ARM	AD
051	00000010	NGERH1015FCZZ	PS JOINT GEAR 25T	AD
051	00000011	LPINS0289FCZZ	DRIVE JOINT PIN	AC
051	00000012	MSPRC2198FCZZ	DRIVE JOINT PIN SPRING	AA
051	00000013	LPLTM4720FCZZ	DOOR SWITCH FIXING PLATE	AE
051	00000014	VHPGP1A71A1-1	PHOTO SENSOR(GP1A71A1)	AG
051	00000015	CROLR1052FC31	REVERSING ROLLER UNIT	AV
051	00000016	MARMP0183FCZZ	SEPARATOR ROLLER RELEASE ARM	AE
051	00000017	MSPRC2189FCZZ	SEPARATOR ROLLER PRESSURE SPRING	AA
051	00000018	CGIDM1489FC01	SECOND CASSETTE GUIDE R	AZ
051	00000019	PCLR-0393FCZZ	COLLAR	AD
051	00000020	LHLDZ1220FCZZ	COLLAR HOLDER	AF
051	00000022	CCOVH0222FC01	SECOND TRANSPORT COVER	AV
051	00000023	VHPGP3A38//-1	PHOTO TRANSISTOR(GP3A38)	AH
051	00000024	LPLTM4719FCZZ	PE SENSOR FIXING PLATE	AC
051	00000025	LPLTM4553FCZZ	SECOND CASSETTE JOINT PLATE R	AS
051	00000026	DHAI-2297FCZZ	SECOND PAPER FEEDING HARNESS	BA
051	00000027	RCORF0012FCZZ	CORE(044S-665802)	AH
051	00000028	DHAI-2339FCZZ	JAM DETECT INTERFACE HARNESS	AF
051	00000029	XEBSE40P12000	SCREW	AA
051	00000030	CFRM-0807FC51	2ND CASSETTE PAPER FEEDING UNIT	BM
051	00000031	XHBSE40P10000	SCREW(M4X10)	AA
051	00000032	PCOVP1261FCZZ	SECOND HANDLE COVER LF	AC
051	00000033	XCSSD40P10000	SCREW(M4X10)	AA
051	00000034	PCOVP1262FCZZ	SECOND HANDLE COVER LR	AC
051	00000035	XEPSD30P20000	SCREW(M3X20)	AA
051	00000036	NBRGC0133FCZ1	PF BEARING(M8)	AC
051	00000037	MSPRT2199FCZZ	SECOND JOINT ARM SPRING	AB
051	00000038	PCUSS0302FCZZ	RELEASE ARM CUSHION	AA
051	00000039	PCUSS0315FCZZ	ROLLER CUSHION	AB
051	00000040	MSPRC2197FCZZ	SECOND ROLLER SPRING	AA
051	00000041	PCOVP1259FCZZ	SECOND HANDLE COVER RF	AC
051	00000042	PCOVP1260FCZZ	SECOND HANDLE COVER RR	AC
051	00000043	XHBSD40P20000	SCREW(M4X20)	AA
051	00000044	LX-WZ0010FCZZ	WASHER	AA
051	00000045	XHBSD40P12000	SCREW(M4X12)	AA
051	00000101	LX-BZ0744FCZZ	SECOND CASSETTE JOINT SCREW A	AC
051	00000102	LX-BZ0745FCZZ	SECOND CASSETTE JOINT SCREW B,250 CAS	AD

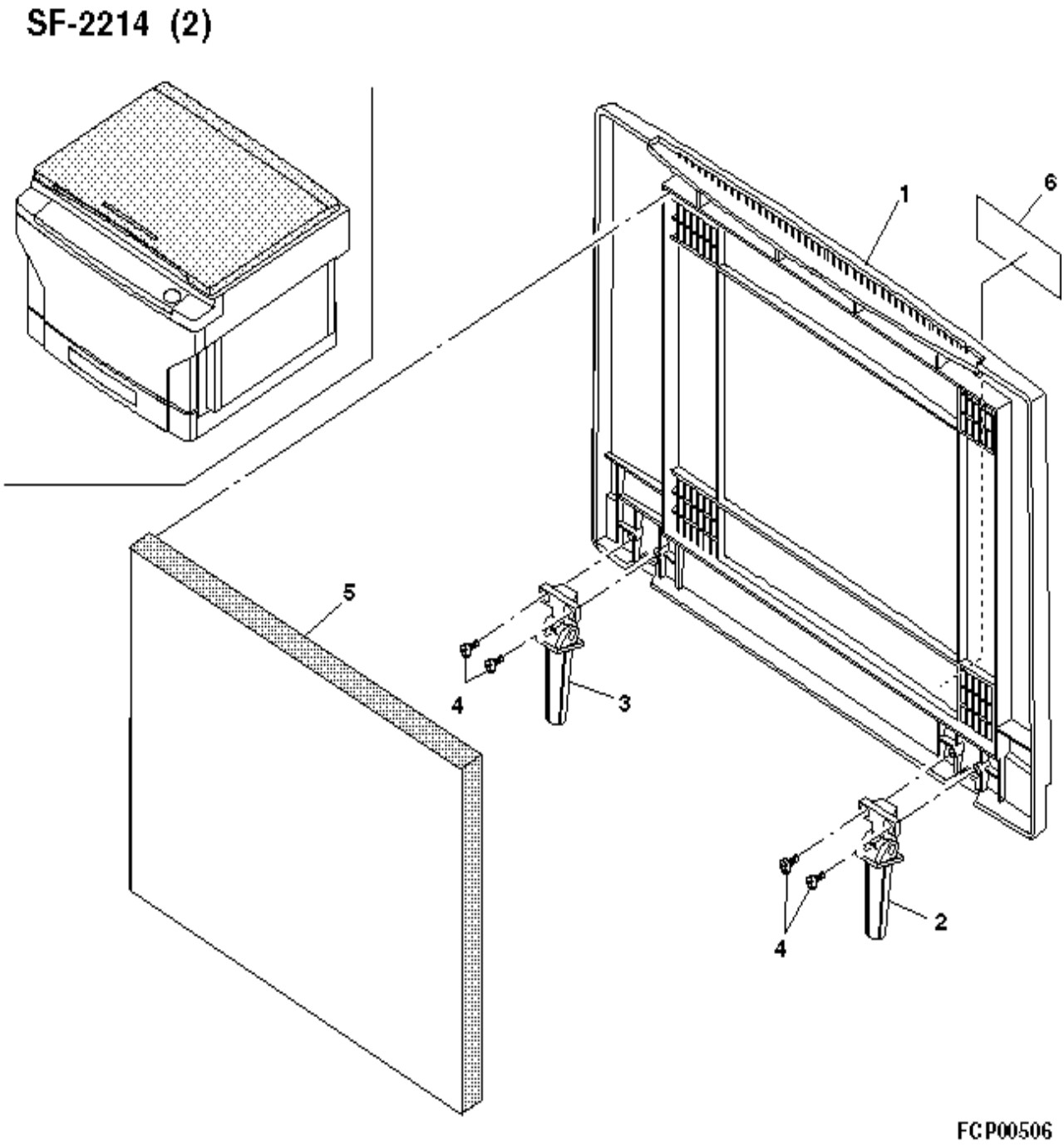
SECTION	REFNO	PARTCODE	DESCRIPTION	PRICE
052	00000001	XRESP70-08000	E TYPE RING(7MM)	AA
052	00000002	NBRGP0510FCZZ	ROLLER BEARING	AC
052	00000003	NROLR1035FCZZ	SECOND TRANSPORT ROLLER	AN
052	00000004	NBRGC0504FCZZ	BEARING	AC
052	00000005	NGERH1017FCZZ	TRANSPORT GEAR 19T	AM
052	00000006	XRESP50-06000	E TYPE RING(5MM)	AA
052	00000007	NGERH0209FCZ1	DELIVERY ROLLER GEAR 24T	AB
052	00000008	CPLTM4561FC01	SECOND DRIVE PLATE	AF
052	00000009	XEBSE40P10000	SCREW(M4X10)	AA
052	00000010	XRESP40-05000	E TYPE RING(4E)	AA
052	00000011	PCLC-0231FCZZ	PAPER FEEDING CLUTCH	AW
052	00000012	LPINS0134FCZZ	PIN(M2-12)	AB
052	00000013	PCLR-0230FCZZ	COLLAR	AD
052	00000014	MSPRC2202FCZZ	LIMITER SPRING 250	AD
052	00000015	MARMP0187FCZZ	ROLLER RELEASE ARM	AC
052	00000016	MSPRC2201FCZZ	ROLLER RELEASE ARM SPRING 250	AB
052	00000017	NPLYZ0106FCZZ	PULLEY 22	AC
052	00000018	LPINS0133FCZZ	PIN(M2-10)	AA
052	00000019	NROLR1049FCZZ	PAPER FEEDING ROLLER	AT
052	00000020	NSFTZ2054FCZZ	SECOND PAPER FEEDING ROLLER SHAFT	AM
052	00000021	LSTPP0279FCZZ	STOPPER	AB
052	00000022	NROLR0878FCZZ	ROLLER	AM
052	00000023	NBLTH0235FCZZ	BELT(80MXL 3.2)	AF
052	00000024	NSFTZ2118FCZZ	ROLLER SHAFT	AC
052	00000025	LHLDZ1204FCZZ	PAPER FEEDING COLLAR HOLDER 250	AG
052	00000026	NBRGC0133FCZ1	PF BEARING(M8)	AC
052	00000027	LFRM-0807FCZZ	SECOND PAPER FEEDING FRAME	AM
052	00000028	VHPGP3A101/-1	PHOTO TRANSISTOR(GP3A101)(CSPPD)	AM
052	00000029	LX-WZ0407FCZZ	WASHER	AB
052	00000901	CFRM-0807FC51	2ND CASSETTE PAPER FEEDING UNIT	BM

SF2014
Section 1

SF-2214 (1)

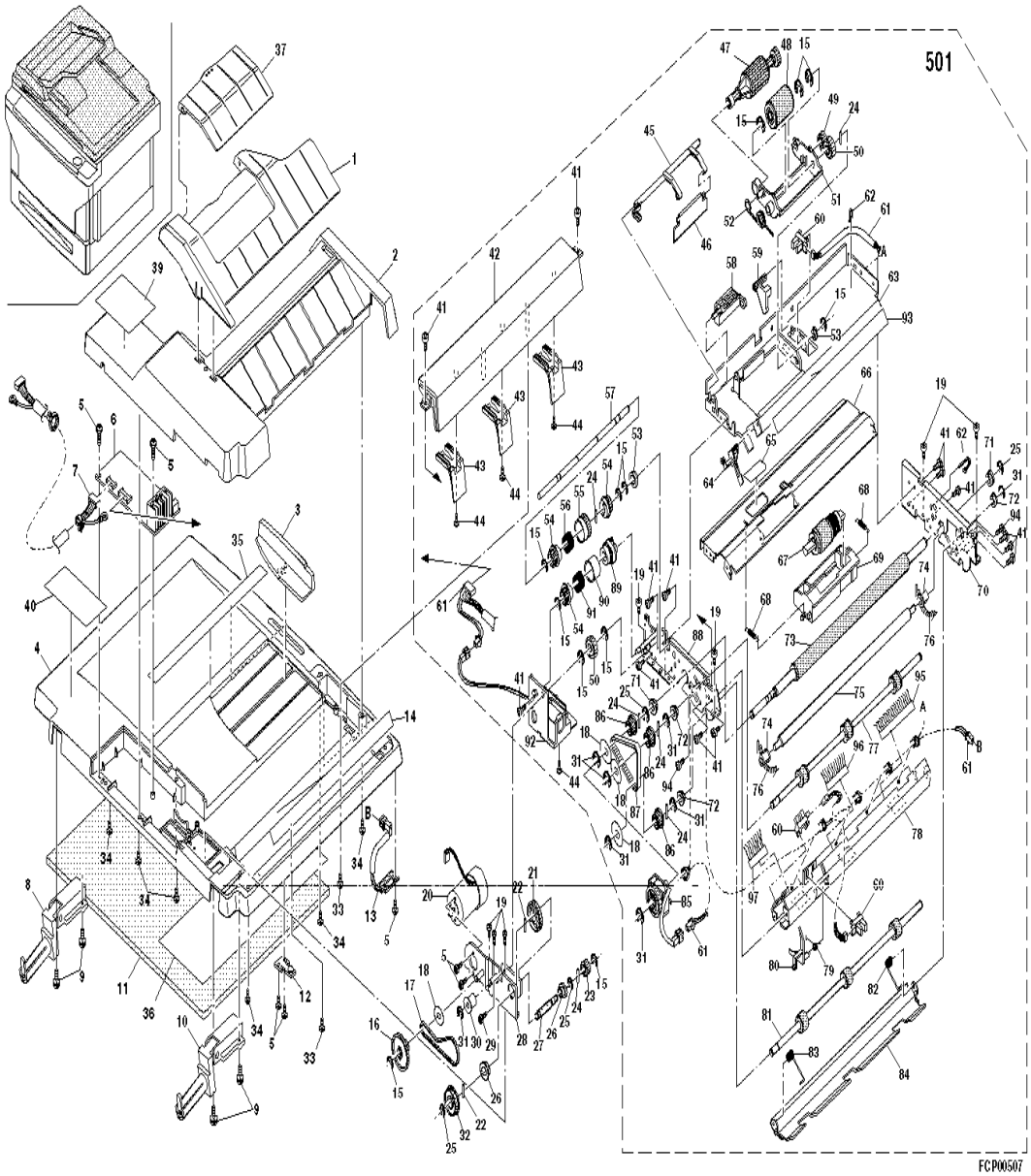


SF2014
Section 2



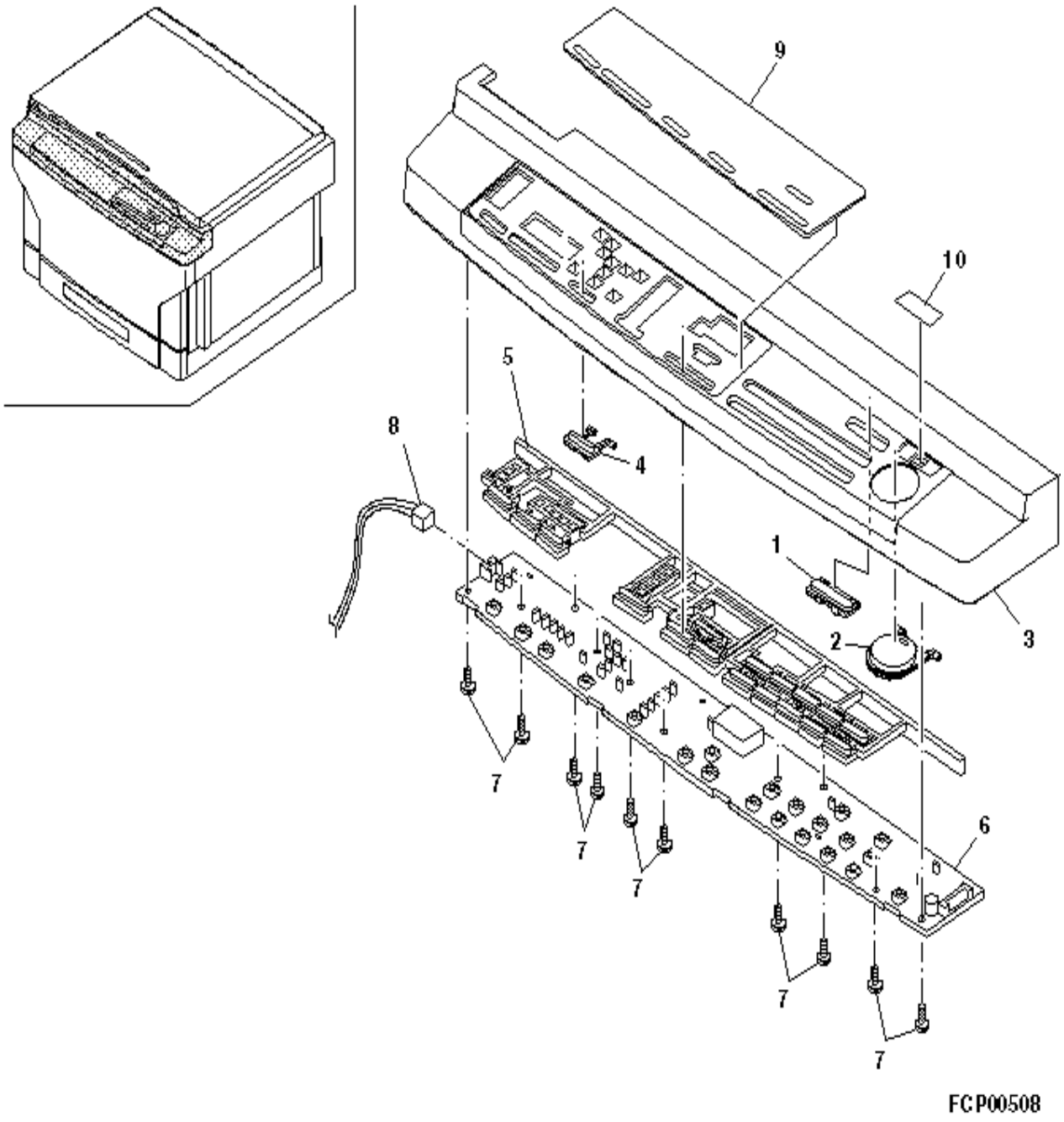
SF2014
Section 3

SF-2214 (3)



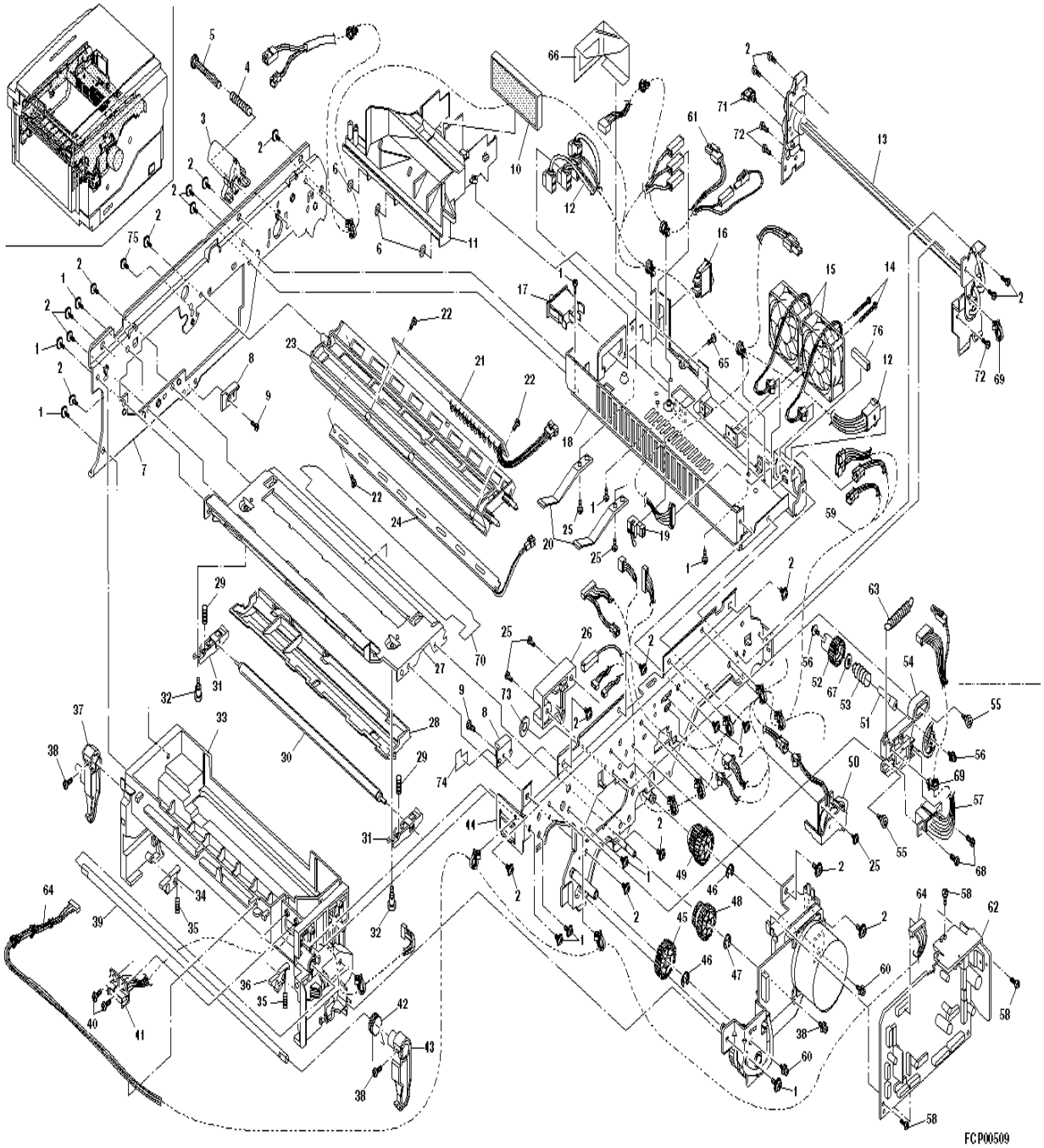
SF2014
Section 4

SF-2214 (4)



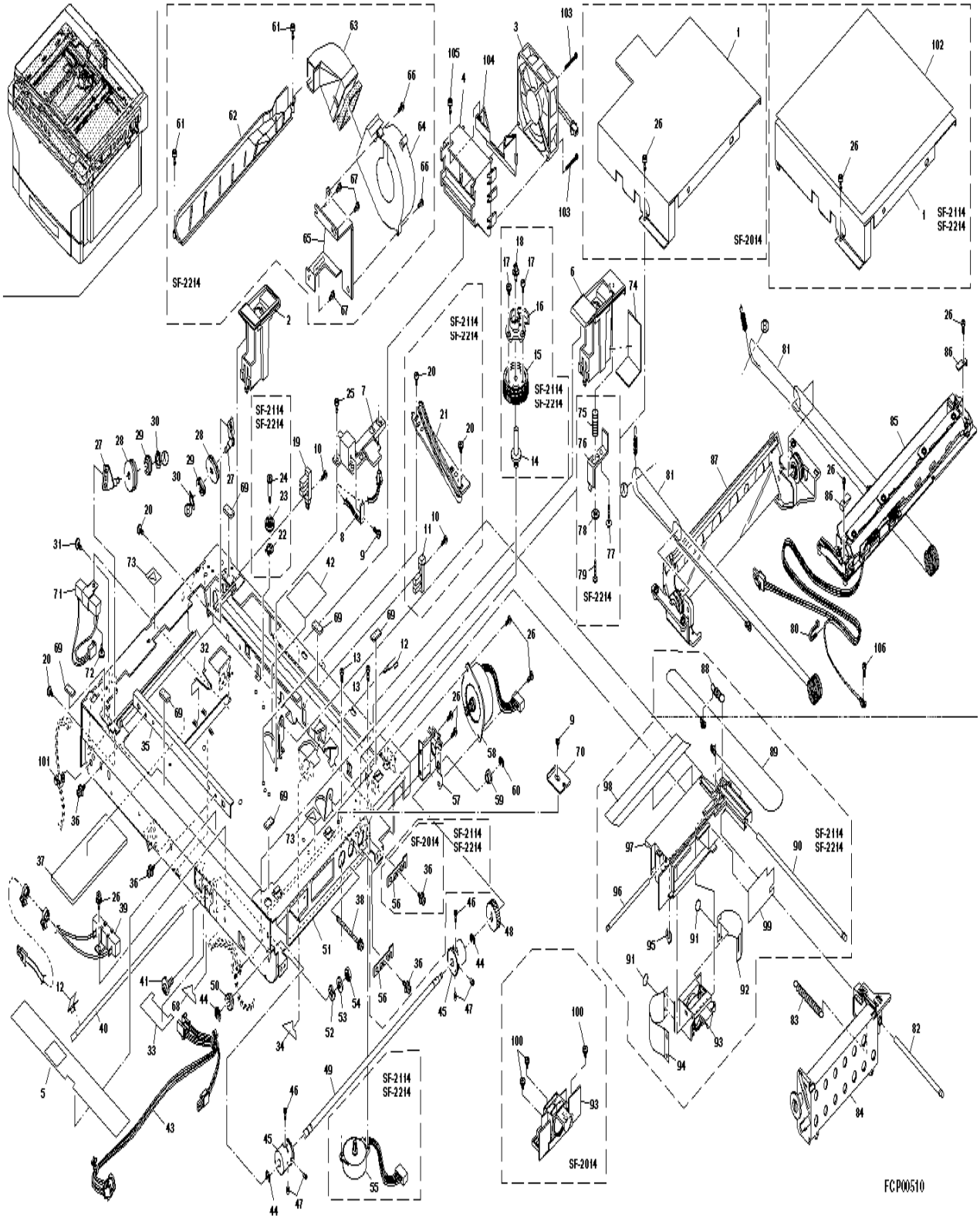
SF2014
Section 5

SF-2214 (5)



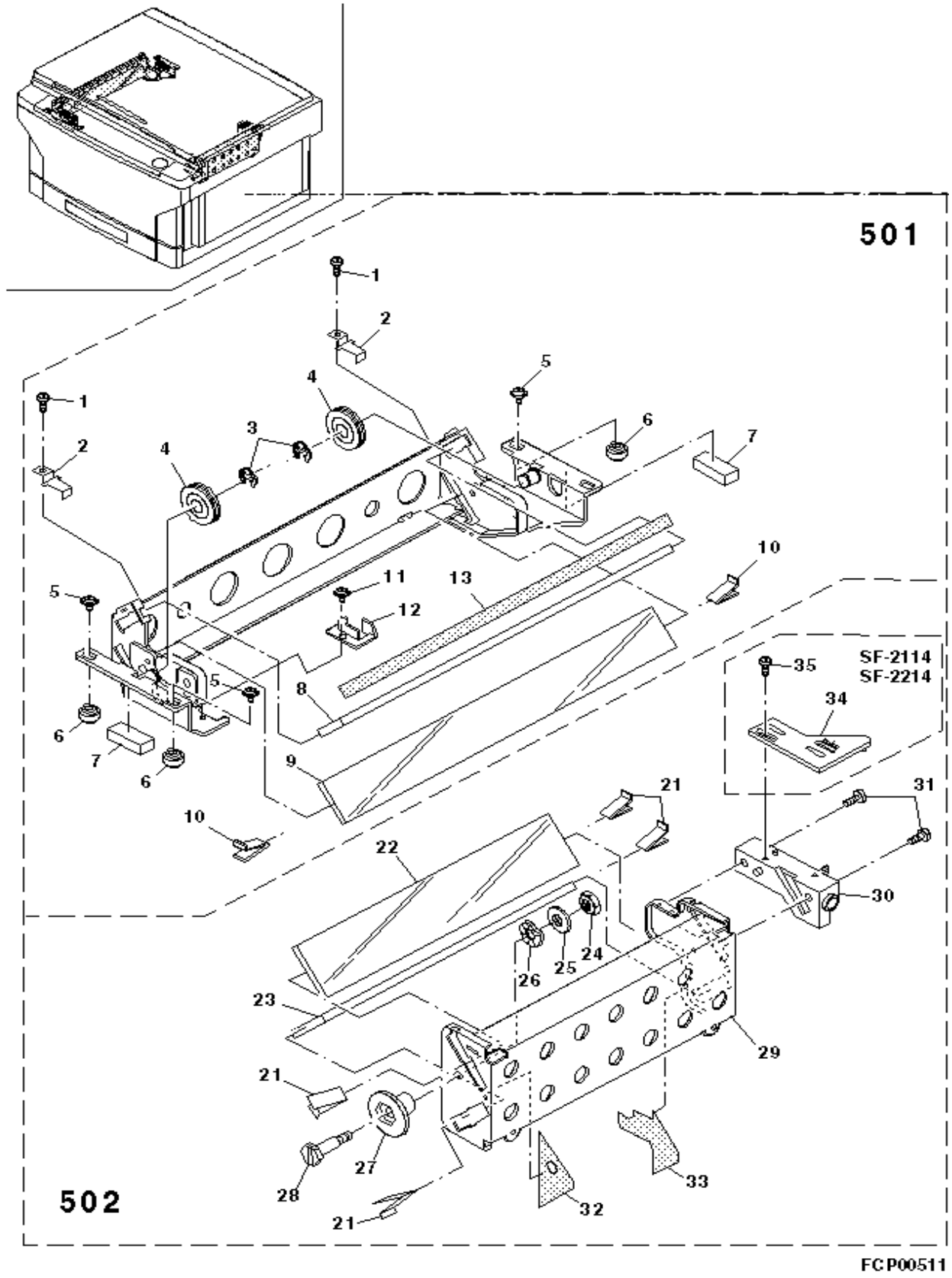
SF2014
Section 6

SF-2214 (6)



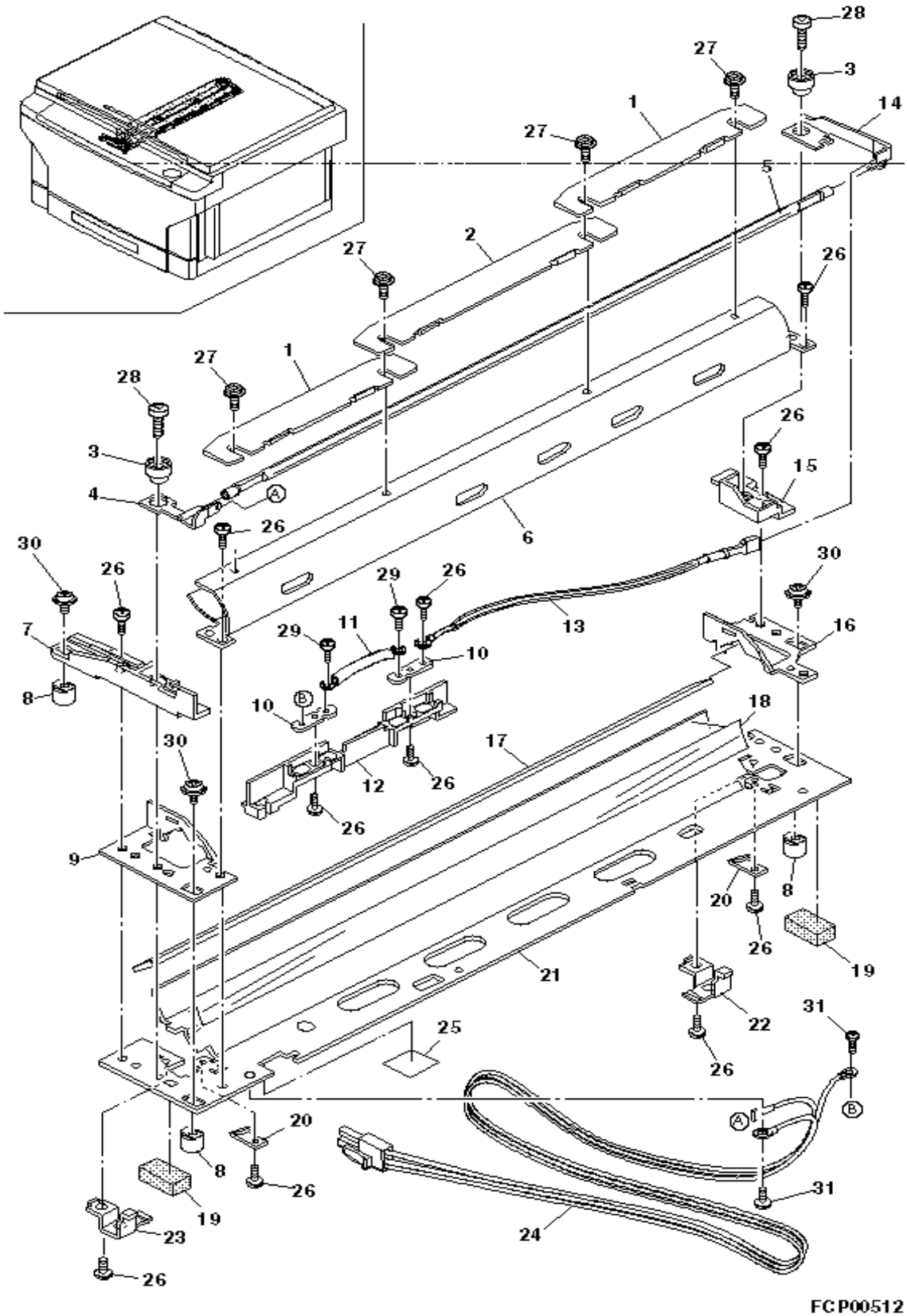
SF2014
Section 7

SF-2214 (7)



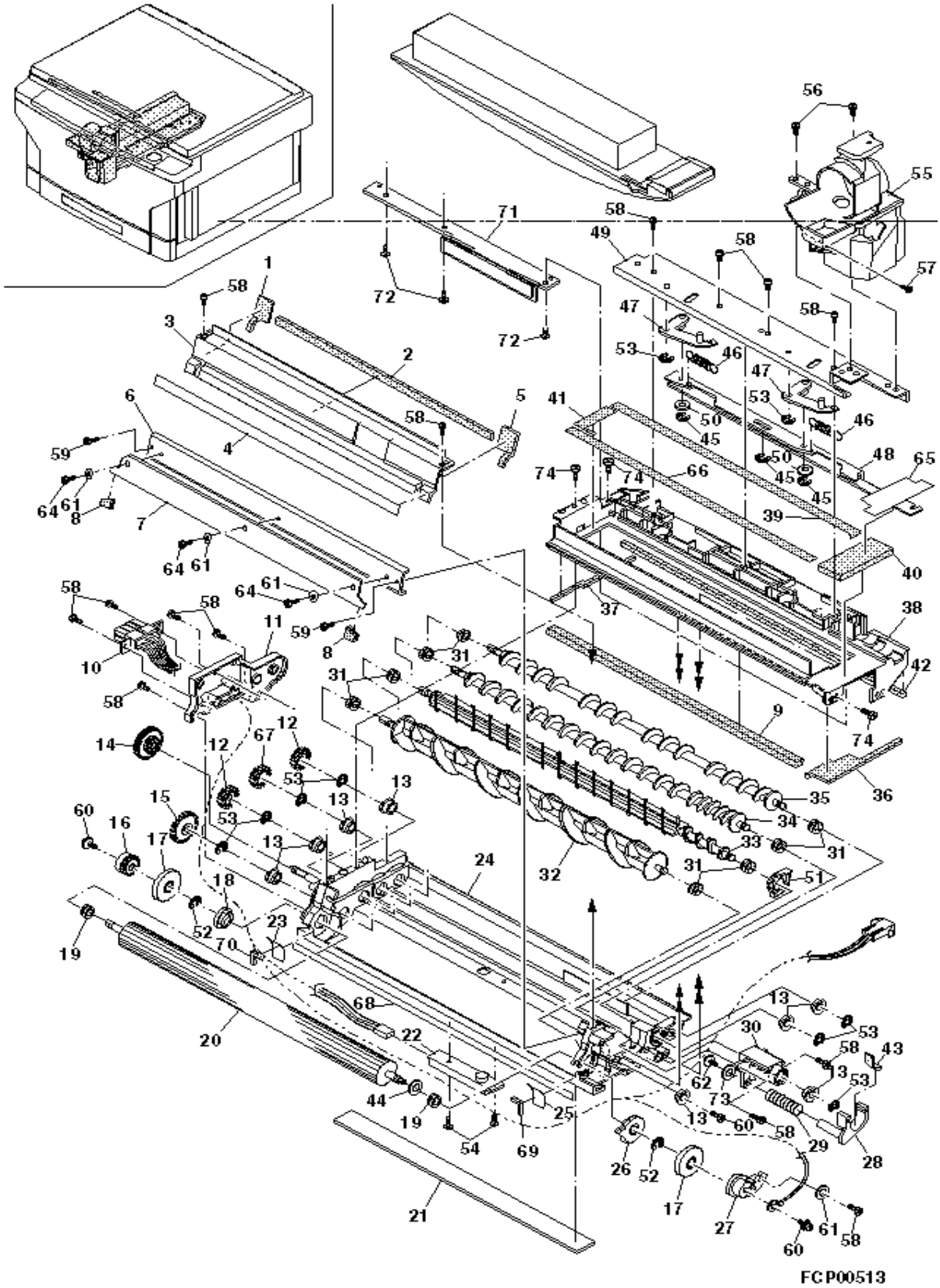
SF2014
Section 8

SF-2214 (8)



SF2014
Section 9

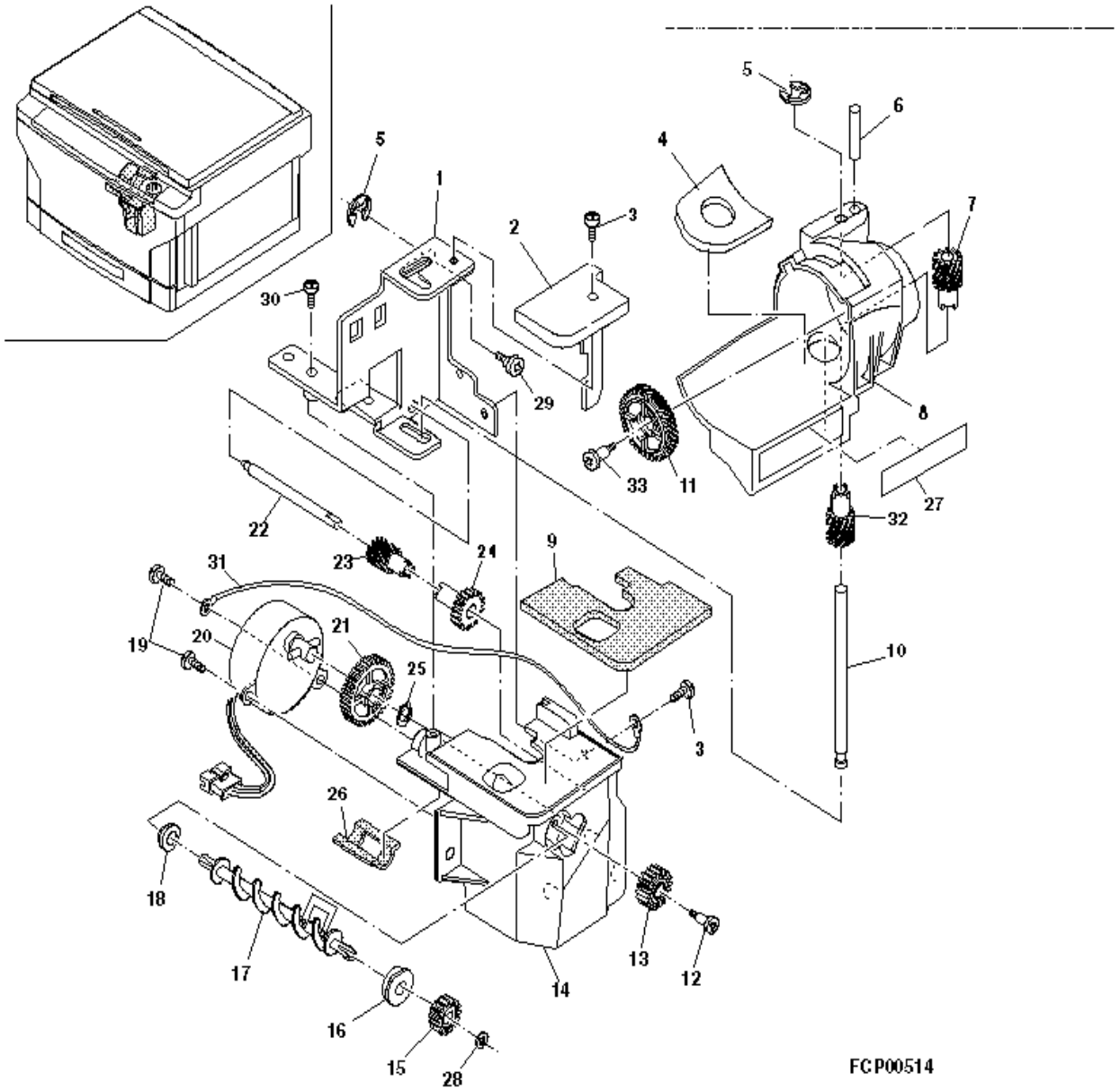
SF-2214 (9)



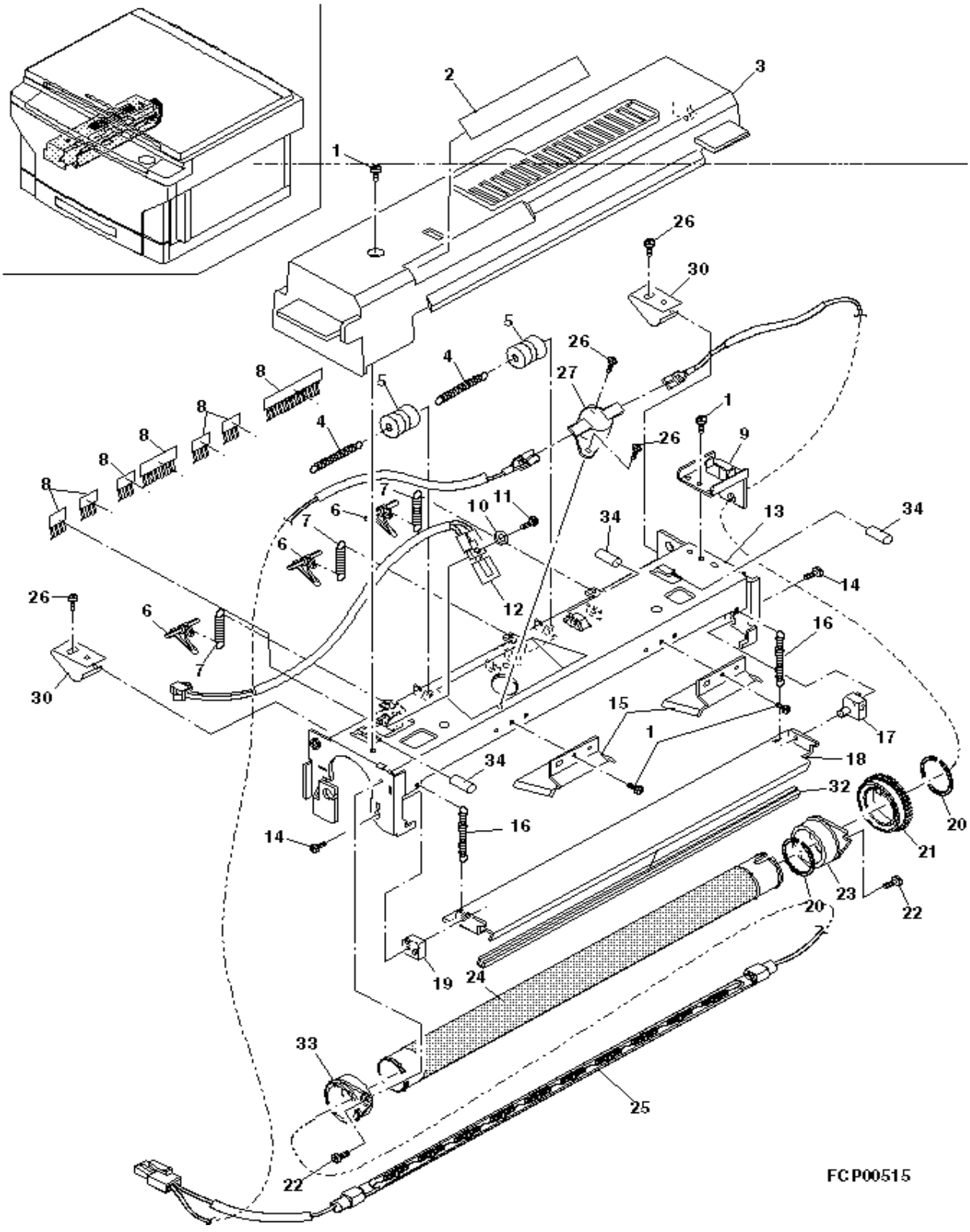
SF2014
Section 10

SKY-H17

SF-2214 (10)

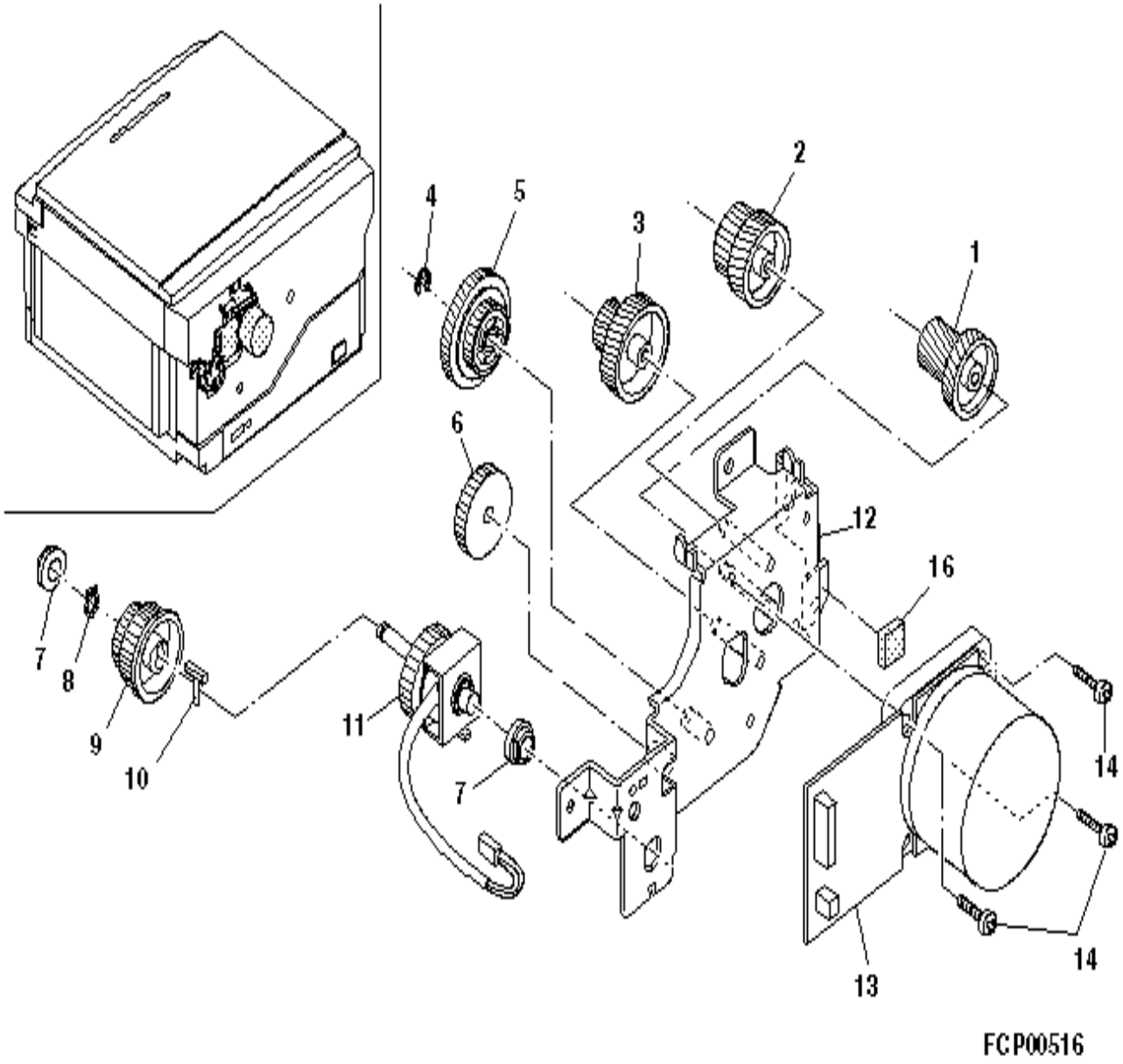


SF2014
Section 11
SF-2214 (11)



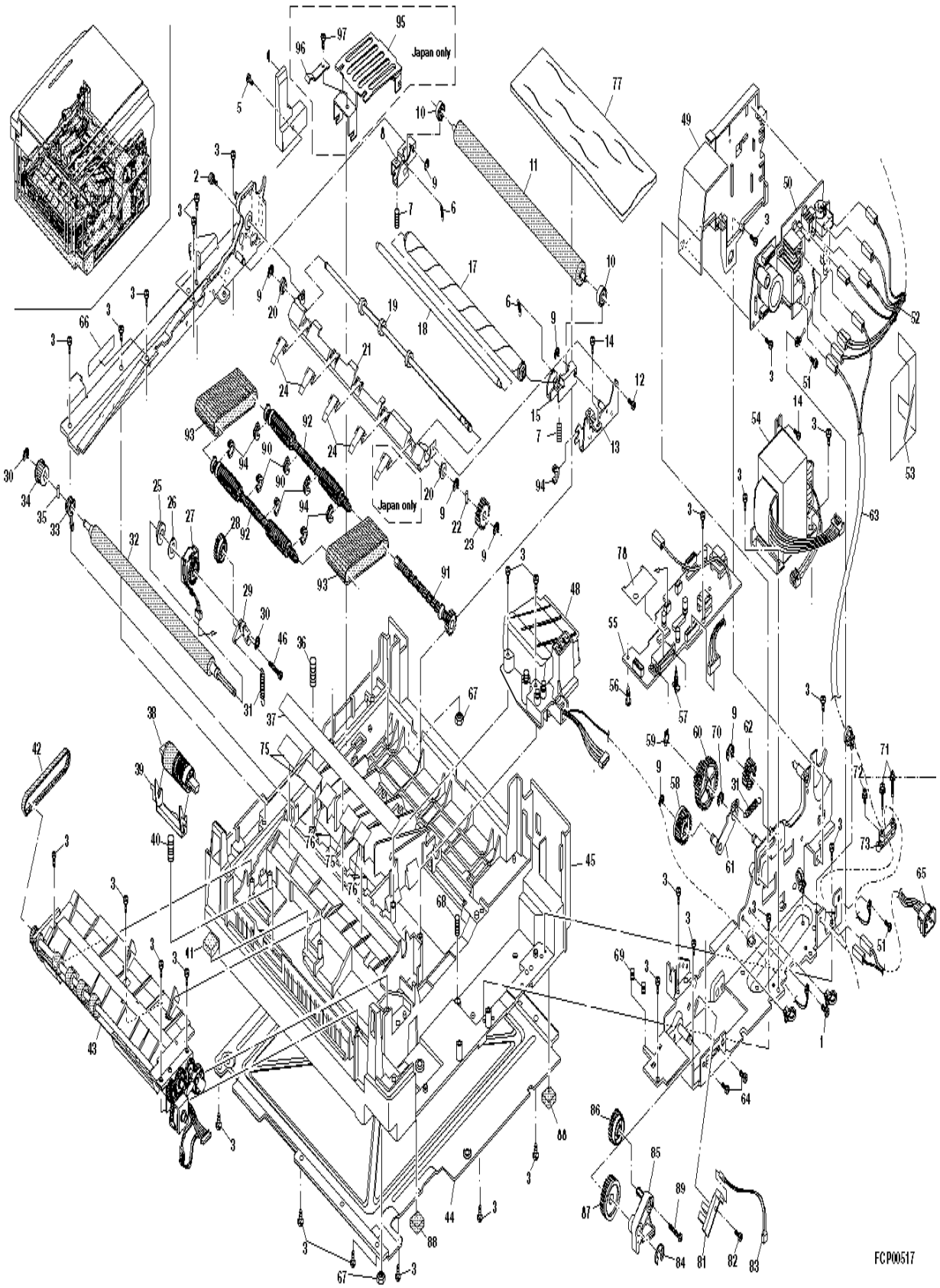
SF2014
Section 12

SF-2214 (12)



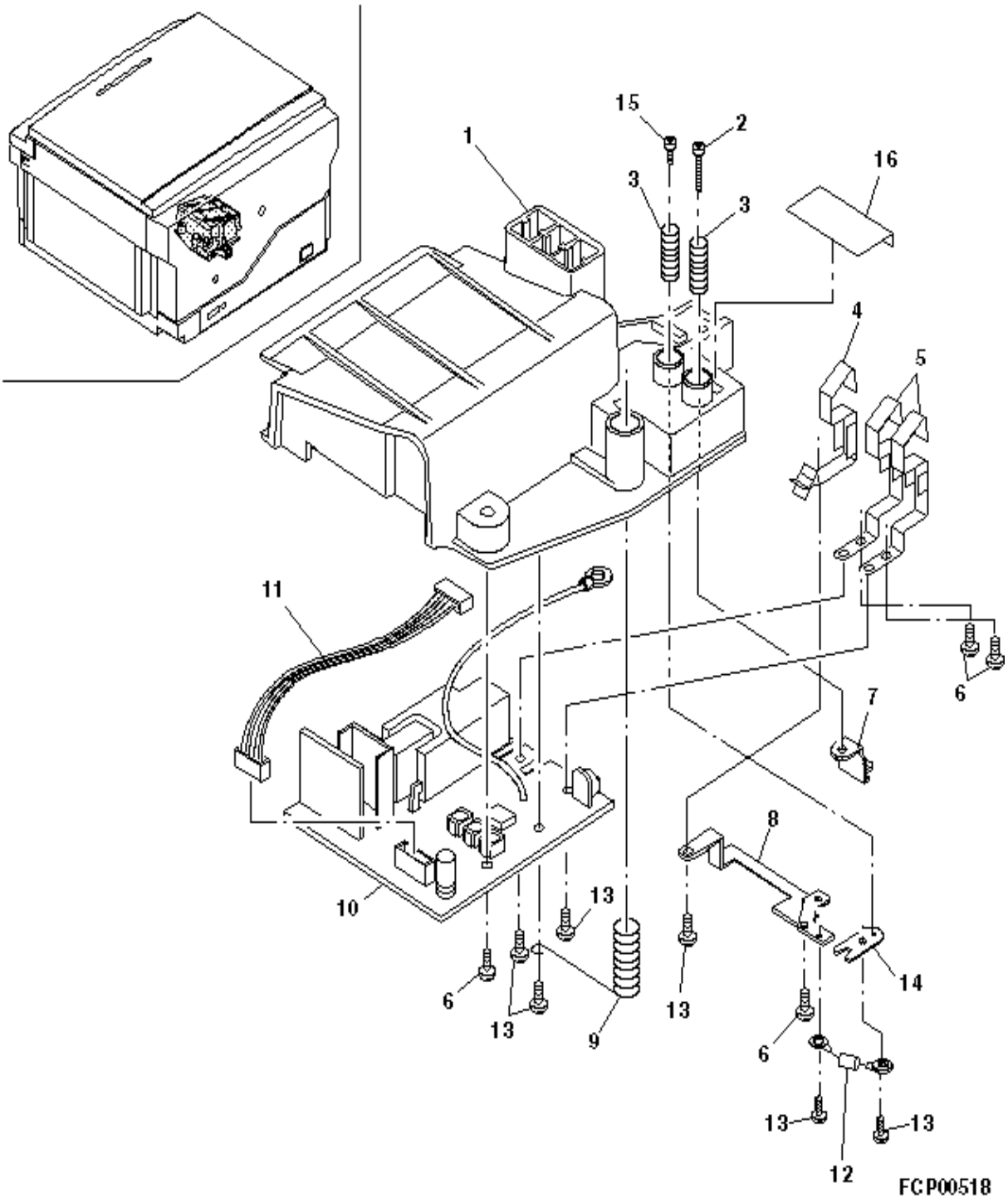
SF2014
Section 13

SF-2214 (13)



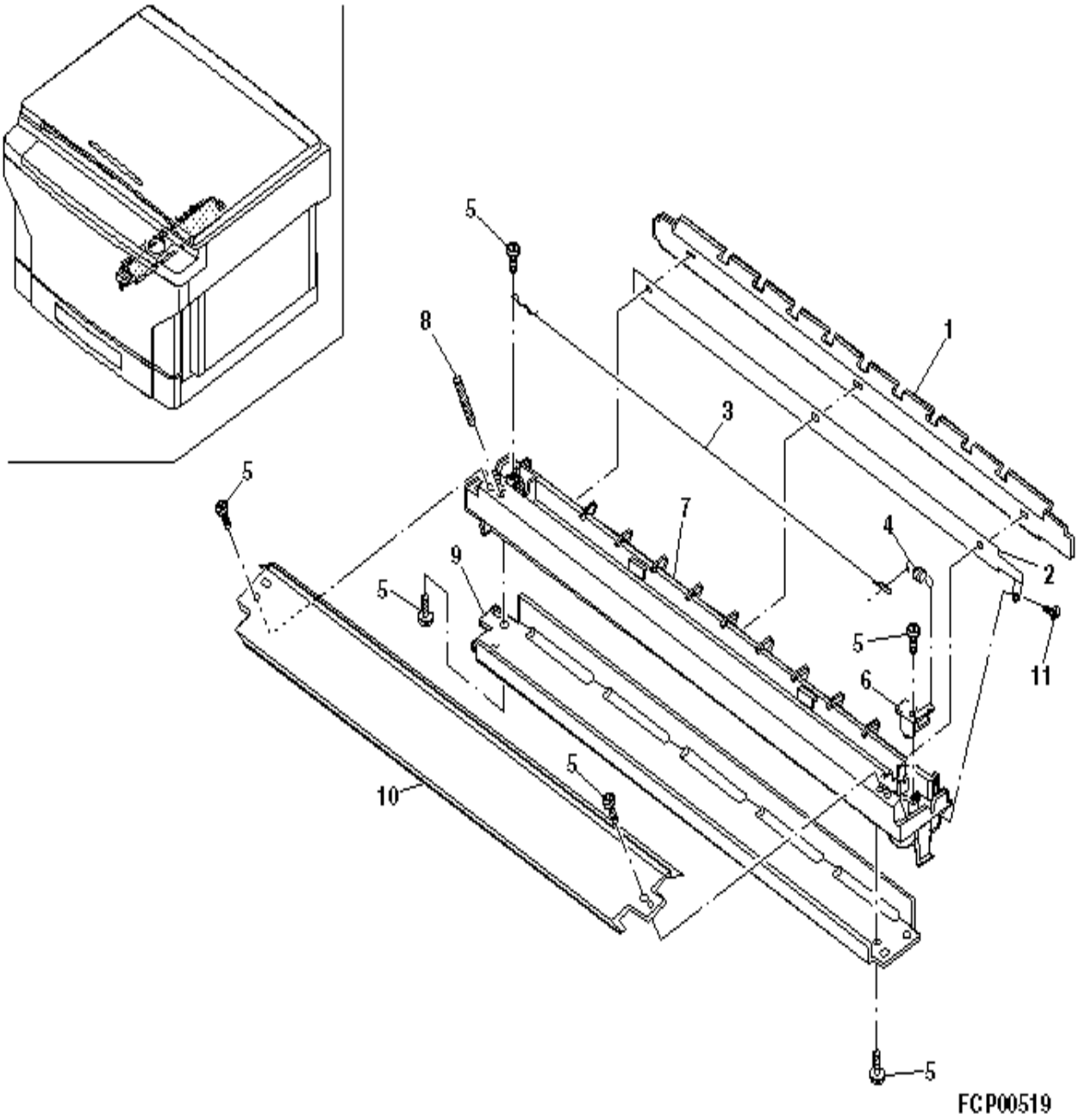
SF2014
Section 14

SF-2214 (14)



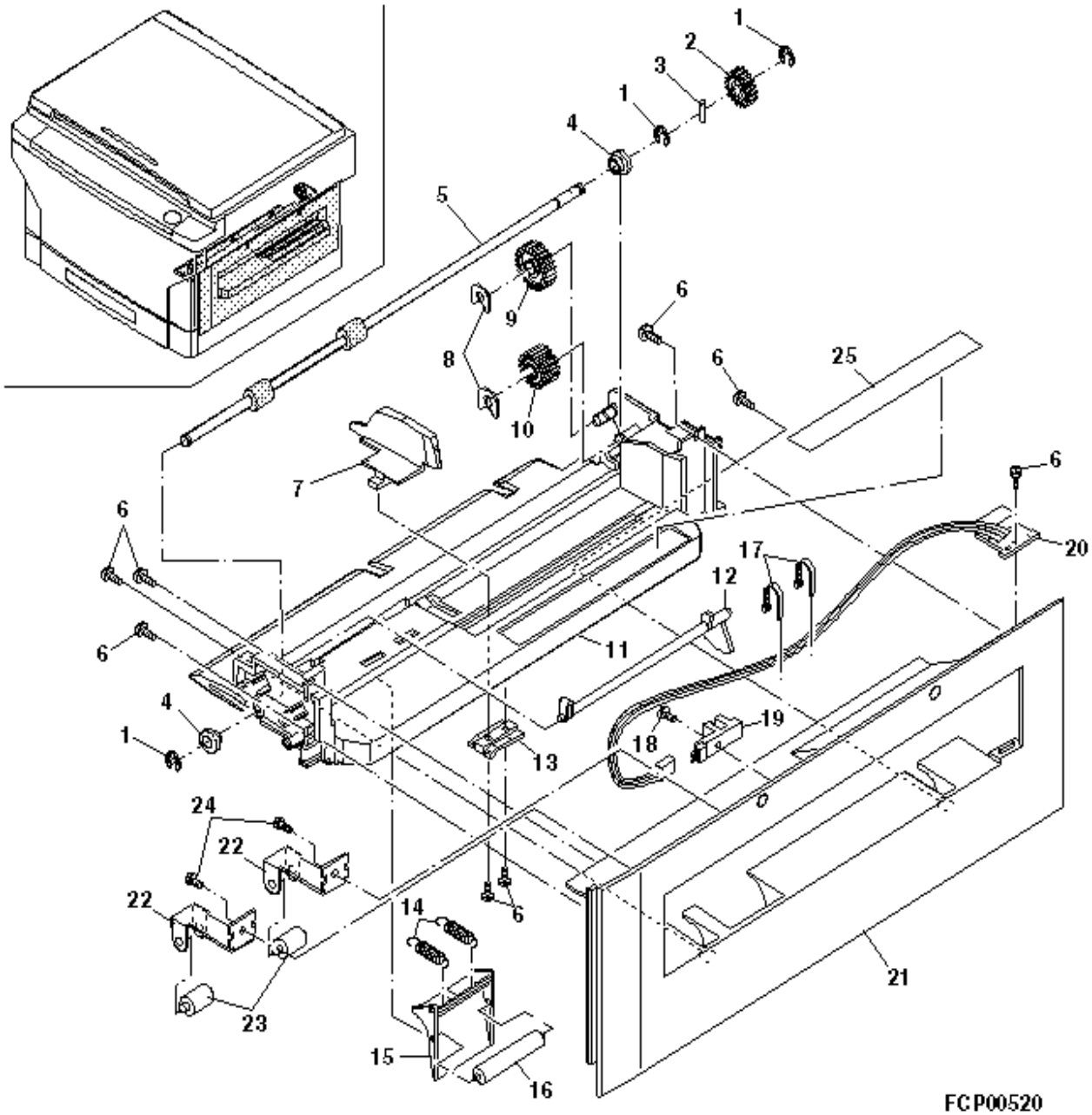
SF2014
Section 15

SF-2214 (15)



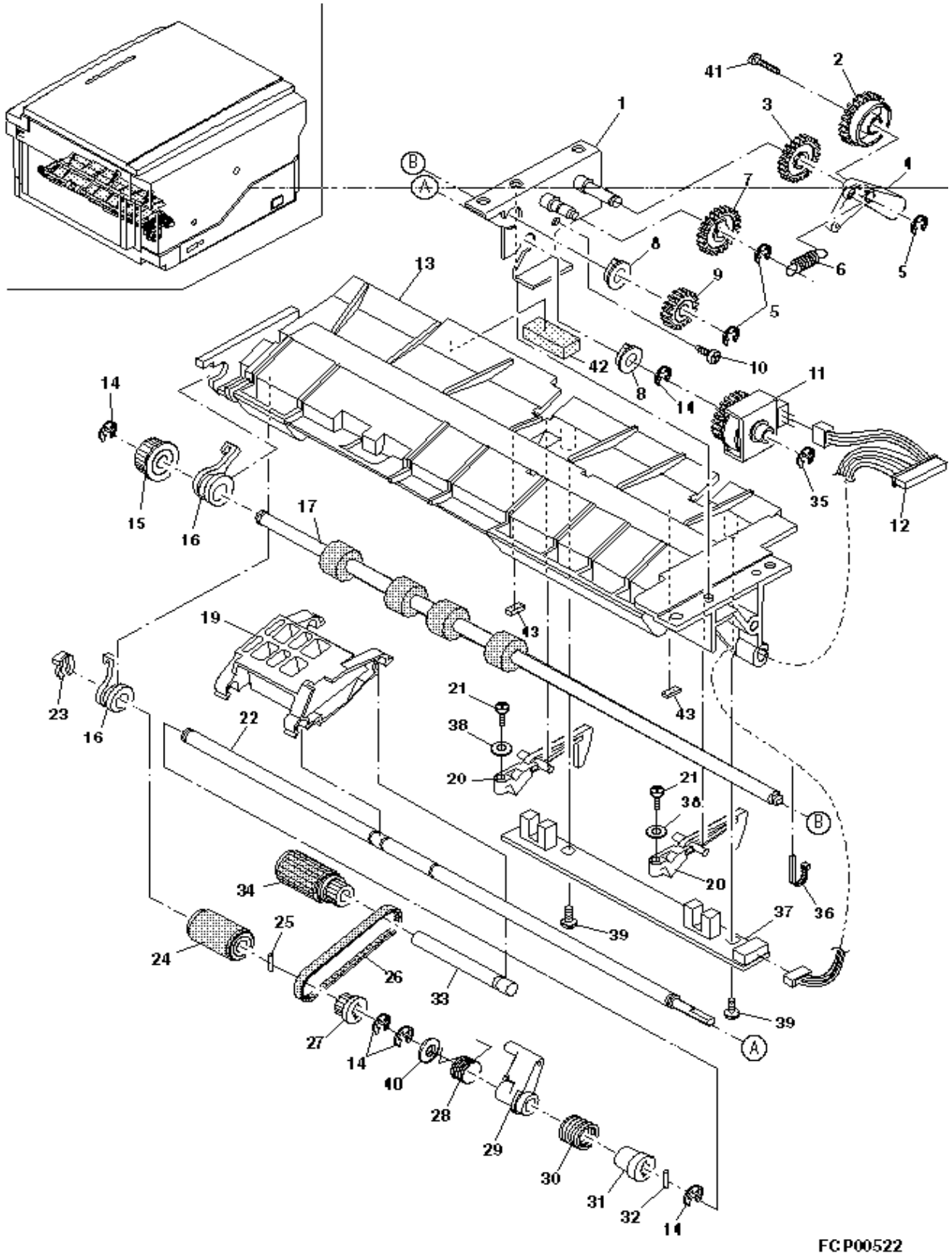
SF2014
Section 16

SF-2214 (16)

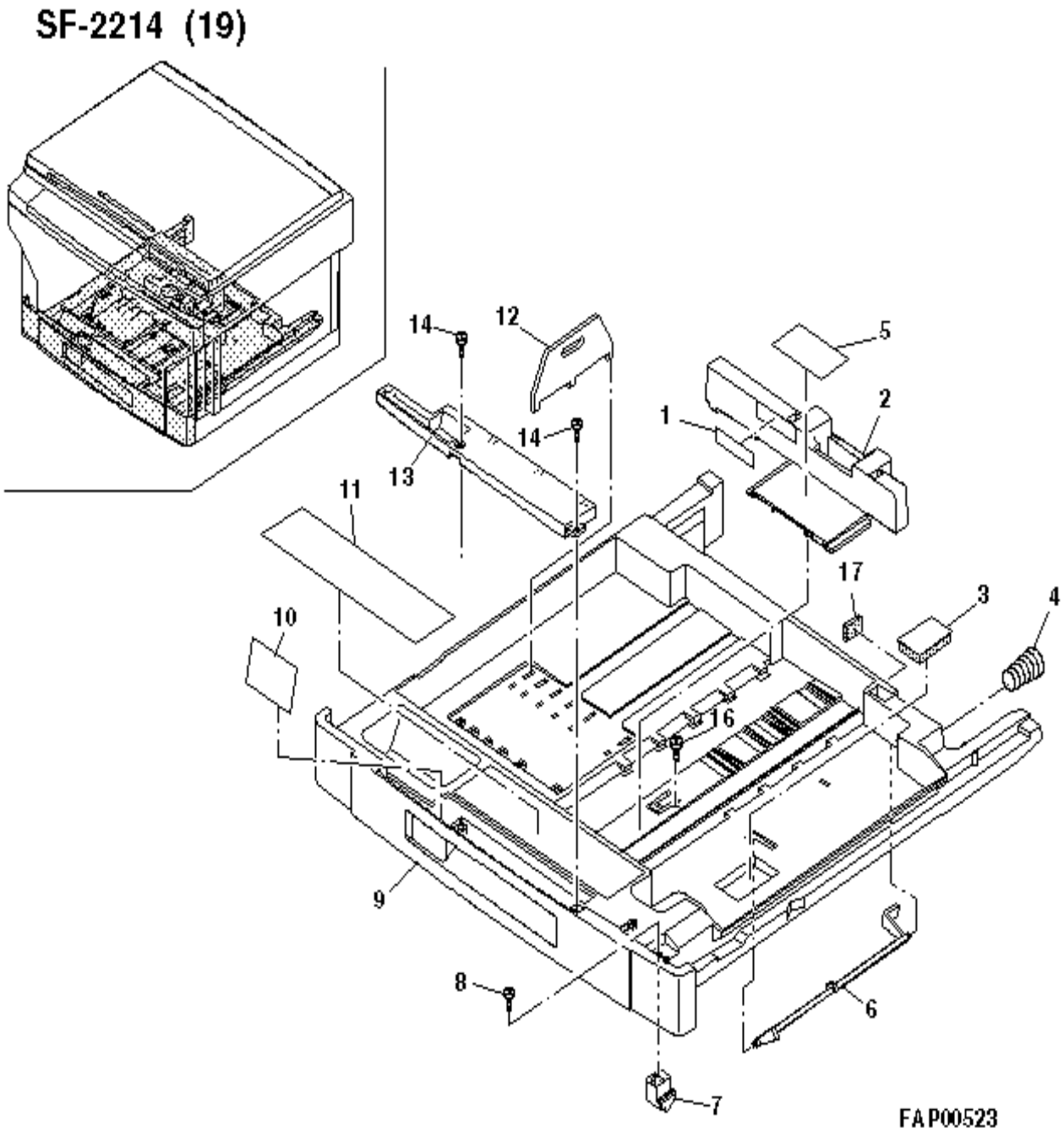


SF2014
Section 18

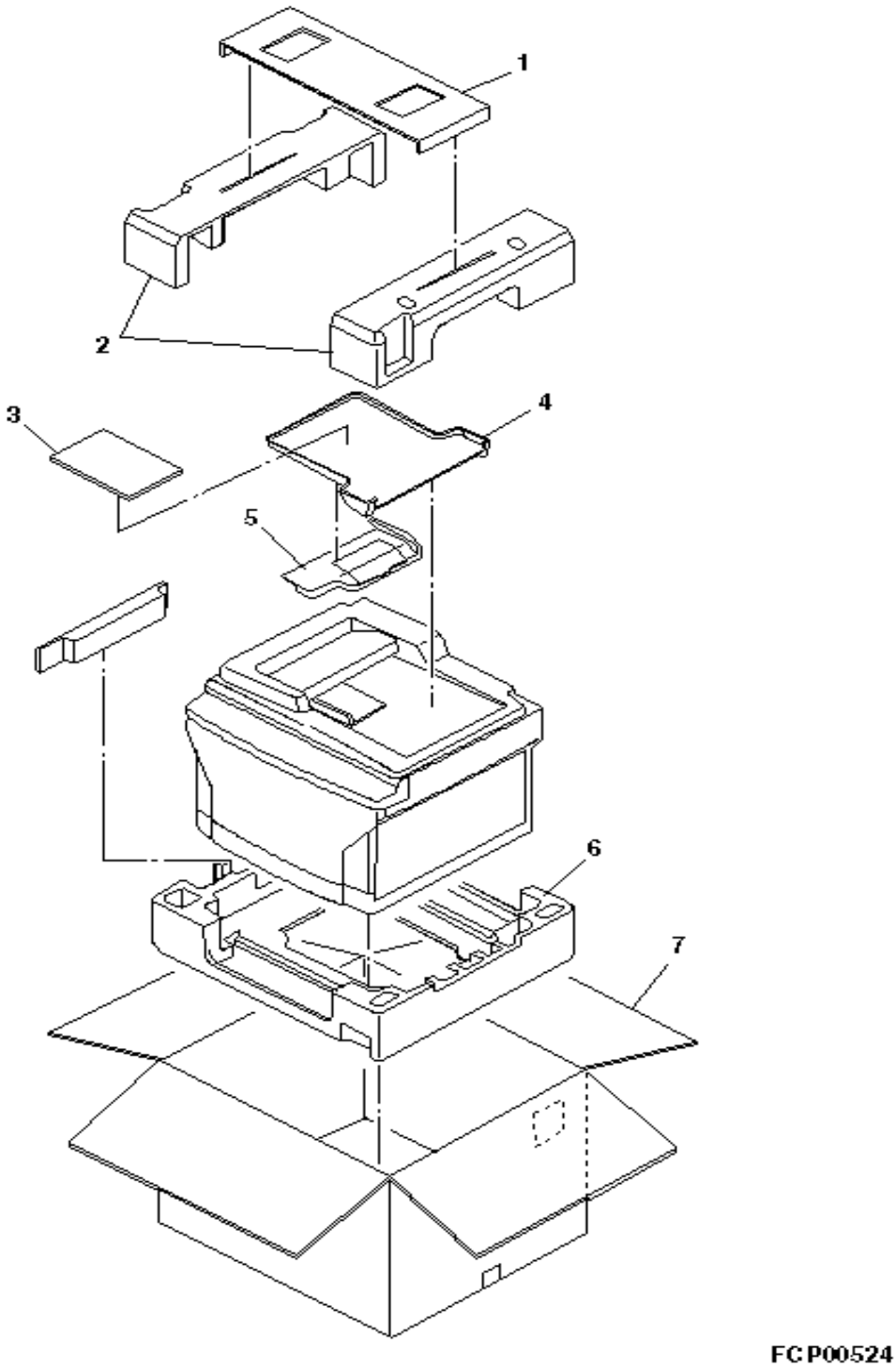
SF-2214 (18)



SF2014
Section 19

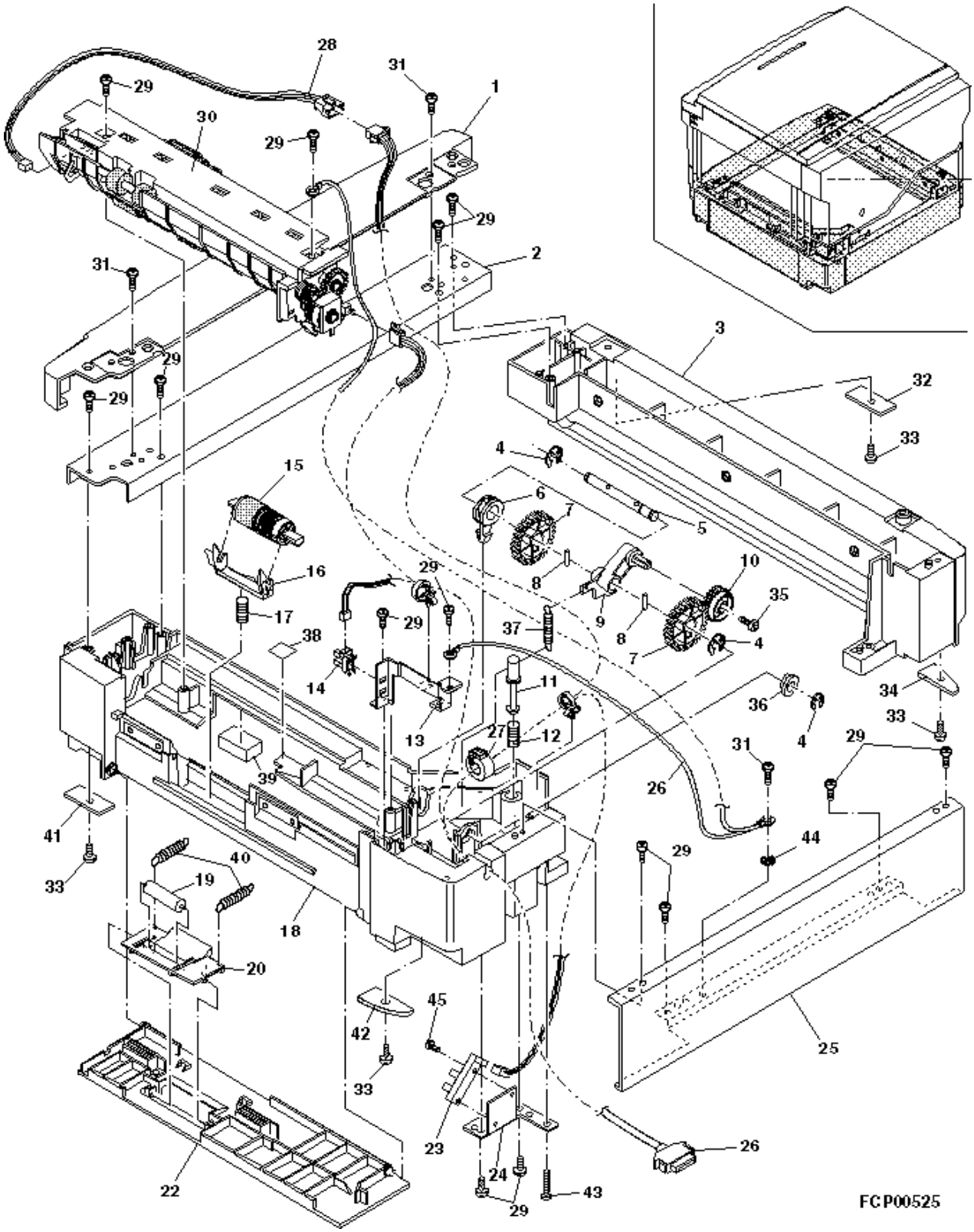


SF2014
Section 25
SF-2214 (25)



SF2014
Section 51

SF-2214 (51)



SF2014
Section 52